




TEST REPORT

<p>KCTL Inc. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-31-285-0894 FAX: 82-505-299-8311 www.kctl.co.kr</p>	<p>Report No.: KR20-SPF0035-B Page (1) of (338)</p>	
--	---	---

1. Client

- Name : Samsung Electronics Co., Ltd.
- Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
- Date of Receipt : 2020-07-01

2. Use of Report : Certification

3. Name of Product and Model : Tablet PC
 ◦ Model Number : SM-T575
 ◦ Manufacturer and Country of Origin: Samsung Electronics Co., Ltd./ Vietnam



4. FCC ID : A3LSMT575

5. Date of Test : 2020-07-16 ~ 2020-08-25

6. Location of Test : Permanent Testing Lab On Site Testing (Address: Address of testing location)

7. Test Standards : IEEE 1528-2013, ANSI/IEEE C95.1, KDB Publication

8. Test Results : Refer to the test result in the test report

Affirmation	Tested by	Technical Manager
	Name : Hosik Sim  (Signature)	Name : Jongwon Ma  (Signature)

2020-09-02

KCTL Inc.

As a test result of the sample which was submitted from the client, this report does not guarantee the whole product quality. This test report should not be used and copied without a written agreement by KCTL Inc.

REPORT REVISION HISTORY

Date	Revision	Page No
2020-08-26	Originally issued	-
2020-09-01	Section 2.5.2 Updated description for each of the WLAN Ant. Section 2.5.3 Added Note description	23 25
2020-09-02	Section 2.1 Added NFC mode	5

Note: The Report No. KR20-SPF0035-A is superseded by the report No. KR20-SPF0035-B

This report shall not be reproduced except in full, without the written approval of KCTL Inc. This document may be altered or revised by KCTL Inc. personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by KCTL Inc. will constitute fraud and shall nullify the document. This test report is a general report that does not use the KOLAS accreditation mark and is not related to KS Q ISO/IEC 17025 and KOLAS accreditation.

General remarks for test reports

1. Identification when information is provided by the customer: Information marked "#" is provided by the customer.
- Disclaimer: This information is provided by the customer and can affect the validity of results.



CONTENTS

1. General information.....	4
2. Device information.....	5
3. #LTE Information.....	29
4. Specific Absorption Rate.....	31
5. SAR Measurement Procedures.....	32
6. SAR Measurement Configurations.....	33
7. RF Exposure Limits.....	34
8. FCC SAR General Measurement Procedures.....	35
9. RF Average Conducted Output Power.....	42
10. System Verification.....	94
11. SAR Test Results.....	99
12. Simultaneous Transmission.....	118
13. SAR Measurement Variability.....	143
14. Measurement Uncertainty.....	144
15. Test Equipment Information.....	145
16. Test System Verification Results.....	147
17. Test Results.....	175
Appendixes List.....	207
Appendix A. Calibration certificate.....	208
Appendix B. SAR Tissue Specification.....	306
Appendix C. Downlink LTE CA RF Conducted Power.....	307
Appendix D. Power Reduction Verification.....	311
Appendix E. #Antenna Location & Distance.....	323
Appendix F. EUT Photo.....	325
Appendix G. Test Setup Photo.....	328
End of test report.....	338

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (4) of (338)



1. General information

Client : Samsung Electronics Co., Ltd.
Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677,
Rep. of Korea
Manufacturer : Samsung Electronics Co., Ltd.
Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677,
Rep. of Korea
Factory : Samsung Electronics Vietnam Thai Nguyen Co., Ltd (SEVT)
Address : Yen Binh Industrial Park, Dong Tien Ward, Pho Yen Town Thai Nguyen
Province, Vietnam
Contact Person : Choi Hyun Je / chj5630.choi@samsung.com
Laboratory : KCTL Inc.
Address : 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea
Accreditations : FCC Site Designation No: KR0040, FCC Site Registration No: 687132
VCCI Registration No. : R-3327, G-198, C-3706, T-1849
Industry Canada Registration No. : 8035A
KOLAS No.: KT231

1.1 Report Overview

This report details the results of testing carried out on the samples listed in section 2, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this test report is used in any configuration other than that detailed in the test report, the manufacturer must ensure the new configuration complies with all relevant standards and certification requirements. Any mention of KCTL Inc. Wireless lab or testing done by KCTL Inc. Wireless lab made in connection with the distribution or use of the tested product must be approved in writing by KCTL Inc. Wireless lab.

2. Device information

2.1 Basic description

Product Name		Tablet PC		
Product Model Number		SM-T575		
Derivative Model		SM-T577		
Product Manufacturer		Samsung Electronics Co., Ltd.		
Product Serial Number	Radiation	R32N400KG3V		
		R32N400KG5X		
		R32N60119CT		
		R32N60117KR		
		2c900426c849f110		
	Conduction	GSM / WCDMA / LTE	R32N400KZJY	
		WLAN / Bluetooth	R32N400L04T	
Device Overview		Band & Mode	Operating Modes	Tx Frequency (MHz)
		GSM/GPRS/EDGE 850	Voice/Data	824.2 ~ 848.8
		GSM/GPRS/EDGE 1900	Voice/Data	1 850.2 ~ 1 909.8
		WCDMA Band II	Voice/Data	1 852.4 ~ 1 907.6
		WCDMA Band IV	Voice/Data	1 712.4 ~ 1 752.6
		WCDMA Band V	Voice/Data	826.4 ~ 846.6
		LTE Band 2	Voice/Data	1 850.7 ~ 1 909.3
		LTE Band 4	Voice/Data	1 710.7 ~ 1 754.3
		LTE Band 5	Voice/Data	824.7 ~ 848.3
		LTE Band 12	Voice/Data	699.7 ~ 715.3
		LTE Band 13	Voice/Data	779.5 ~ 784.5
		LTE Band 17	Voice/Data	706.5 ~ 713.5
		LTE Band 41	Voice/Data	2 498.5 ~ 2 687.5
		LTE Band 66	Voice/Data	1 710.7 ~ 1 779.3
		2.4 GHz WLAN	Voice/Data	2 412.0 ~ 2 472.0
		U-NII-1	Voice/Data	5 180.0 ~ 5 240.0
		U-NII-2A	Voice/Data	5 260.0 ~ 5 320.0
		U-NII-2C	Voice/Data	5 500.0 ~ 5 720.0
		U-NII-3	Voice/Data	5 745.0 ~ 5 825.0
		Bluetooth	Data	2 402.0 ~ 2 480.0
NFC	Data	13.56		
TDWR Information		5.60 GHz~ 5.65 GHz band (TDWR) is supported by the device.		

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (6) of (338)



2.2 Summary of SAR Test Results

Band	Equipment Class	Highest Reported	
		1g SAR (W/kg)	
		Head	Body
GSM/GPRS/EDGE 850	PCE	0.31	0.53
GSM/GPRS/EDGE 1900	PCE	0.47	0.42
WCDMA Band II	PCE	0.43	0.61
WCDMA Band IV	PCE	0.36	0.58
WCDMA Band V	PCE	0.55	0.67
LTE Band 2	PCE	0.45	0.68
LTE Band 4	PCE	N/A	N/A
LTE Band 5	PCE	0.57	0.61
LTE Band 12	PCE	0.61	0.49
LTE Band 13	PCE	0.76	0.51
LTE Band 17	PCE	N/A	N/A
LTE Band 41	PCE	0.78	0.52
LTE Band 66	PCE	0.36	0.57
2.4 GHz WLAN	DTS	N/A	0.39
U-NII-1	NII	N/A	N/A
U-NII-2A	NII	N/A	0.50
U-NII-2C	NII	N/A	0.38
U-NII-3	NII	N/A	0.31
Bluetooth	DSS	0.10	0.61
Simultaneous SAR per KDB 690783 D01v01r03		1.45	1.59

2.3 Power Reduction for SAR

This device utilizes a power reduction mechanism for some wireless modes and bands for SAR compliance under some conditions when the device is being used in close proximity to the user's hand. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in Tablet use conditions. Detailed descriptions of the power reduction mechanism are included in the operational description.

This device uses an independent fixed level power reduction mechanism for Wireless modes and bands operations during held to ear scenarios.

Per FCC Guidance, the held-to-ear exposure conditions were evaluated at reduced power according to the Head SAR positions described in IEEE 1528-2013. Detailed descriptions of the power reduction mechanism are included in the operational description.

2.4 #Maximum Tune-up power

This device operates using the following maximum output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D01v06.

2.4.1 Maximum 2G/3G/4G Output Power

Band	Mode	Output Power (dBm)		
		Target	Max. Allowed	SAR Test
GSM 850	GSM Voice	33.50	34.50	No
	GPRS 1 TX	33.50	34.50	Yes
	GPRS 2 TX	30.00	31.00	No
	GPRS 3 TX	28.00	29.00	No
	GPRS 4 TX	27.00	28.00	No
	EGPRS 1 TX	26.50	27.50	No
	EGPRS 2 TX	25.50	26.50	No
	EGPRS 3 TX	23.50	24.50	No
	EGPRS 4 TX	22.50	23.50	No
GSM 1900	GSM Voice	30.50	31.50	No
	GPRS 1 TX	30.50	31.50	No
	GPRS 2 TX	28.50	29.50	Yes
	GPRS 3 TX	26.50	27.50	No
	GPRS 4 TX	24.50	25.50	No
	EGPRS 1 TX	26.50	27.50	No
	EGPRS 2 TX	24.50	25.50	No
	EGPRS 3 TX	23.00	24.00	No
	EGPRS 4 TX	22.00	23.00	No

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (8) of (338)



Band	Mode	Output Power (dBm)		
		Target	Max. Allowed	SAR Test
WCDMA Band II	RMC	23.50	24.50	Yes
	HSDPA	23.00	24.00	No
	HSUPA	23.00	24.00	No
	DC-HSDPA	23.00	24.00	No
WCDMA Band IV	RMC	23.50	24.50	Yes
	HSDPA	23.00	24.00	No
	HSUPA	23.00	24.00	No
	DC-HSDPA	23.00	24.00	No
WCDMA Band V	RMC	23.50	24.50	Yes
	HSDPA	23.00	24.00	No
	HSUPA	23.00	24.00	No
	DC-HSDPA	23.00	24.00	No
LTE Band 2		23.50	24.50	Yes
LTE Band 4		24.00	25.00	*No
LTE Band 5		23.50	24.50	Yes
LTE Band 12		23.50	24.50	Yes
LTE Band 13		23.50	24.50	Yes
LTE Band 17		23.50	24.50	*No
LTE Band 41		23.50	24.50	Yes
LTE Band 66		24.00	25.00	Yes

Notes:**LTE Band 4 Measured Results**

SAR for LTE Band 4 (Frequency range: 1 710.7 ~ 1 754.3 MHz) is covered by LTE Band 66 (Frequency range: 1 710.7 MHz ~ 1 779.3 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth

LTE Band 17 Measured Results

SAR for LTE Band 17 (Frequency range: 706.5 MHz ~ 713.5 MHz) is covered by LTE Band 12 (Frequency range: 699.7 MHz~ 715.3 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (9) of (338)



2.4.2 Reduced 2G/3G/4G Output Power–Grip Sensor, RCV+Proximity Sensor

Band	Mode	Grip Sensor Output Power (dBm)			RCV+Proximity Sensor Output Power (dBm)		
		Target	Max. Allowed	SAR Test	Target	Max. Allowed	SAR Test
GSM 850	GSM Voice	23.50	24.50	No	23.50	24.50	Yes
	GPRS 1 TX	23.50	24.50	Yes	23.50	24.50	Yes
	GPRS 2 TX	20.00	21.00	No	20.00	21.00	No
	GPRS 3 TX	18.00	19.00	No	18.00	19.00	No
	GPRS 4 TX	17.00	18.00	No	17.00	18.00	No
	EGPRS 1 TX	16.50	17.50	No	16.50	17.50	No
	EGPRS 2 TX	15.50	16.50	No	15.50	16.50	No
	EGPRS 3 TX	13.50	14.50	No	13.50	14.50	No
GSM 1900	GSM Voice	20.50	21.50	No	23.00	24.00	Yes
	GPRS 1 TX	20.50	21.50	No	23.00	24.00	No
	GPRS 2 TX	18.50	19.50	Yes	21.00	22.00	Yes
	GPRS 3 TX	16.50	17.50	No	19.00	20.00	No
	GPRS 4 TX	14.50	15.50	No	17.00	18.00	No
	EGPRS 1 TX	16.50	17.50	No	19.50	20.50	No
	EGPRS 2 TX	14.50	15.50	No	17.50	18.50	No
	EGPRS 3 TX	13.00	14.00	No	16.00	17.00	No
WCDMA Band II	EGPRS 4 TX	12.00	13.00	No	15.00	16.00	No
	RMC	13.50	14.50	Yes	13.50	14.50	Yes
	HSDPA	13.00	14.00	No	13.00	14.00	No
	HSUPA	13.00	14.00	No	13.00	14.00	No
WCDMA Band IV	DC-HSDPA	13.00	14.00	No	13.00	14.00	No
	RMC	14.50	15.50	Yes	14.50	15.50	Yes
	HSDPA	14.00	15.00	No	14.00	15.00	No
	HSUPA	14.00	15.00	No	14.00	15.00	No
WCDMA Band V	DC-HSDPA	14.00	15.00	No	14.00	15.00	No
	RMC	19.50	20.50	Yes	18.50	19.50	Yes
	HSDPA	19.00	20.00	No	18.00	19.00	No
	HSUPA	19.00	20.00	No	18.00	19.00	No
LTE	DC-HSDPA	19.00	20.00	No	18.00	19.00	No
	LTE Band 2	13.50	14.50	Yes	13.50	14.50	Yes
	LTE Band 4	14.00	15.00	*No	14.00	15.00	*No
	LTE Band 5	18.50	19.50	Yes	18.50	19.50	Yes
	LTE Band 12	16.50	17.50	Yes	19.50	20.50	Yes
	LTE Band 13	16.50	17.50	Yes	20.00	21.00	Yes
	LTE Band 17	16.50	17.50	*No	19.50	20.50	*No
LTE Band 41	13.50	14.50	Yes	17.50	18.50	Yes	
LTE Band 66	14.00	15.00	Yes	14.00	15.00	Yes	

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (10) of (338)

KCTL**Notes:****LTE Band 4 Measured Results**

SAR for LTE Band 4 (Frequency range: 1 710.7 ~ 1 754.3 MHz) is covered by LTE Band 66 (Frequency range: 1 710.7 MHz ~ 1 779.3 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth

LTE Band 17 Measured Results

SAR for LTE Band 17 (Frequency range: 706.5 MHz ~ 713.5 MHz) is covered by LTE Band 12 (Frequency range: 699.7 MHz~ 715.3 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth

KCTL

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (11) of (338)

**2.4.3 Maximum WLAN Output Power****2.4.3.1 Maximum WLAN Output Power(Maximum Tune-up Power)**

Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
WLAN 2.4 GHz	Ant.1, Ant.2	802.11b	1 ~ 11	18.00	19.00	Yes
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11g	1 ~ 11	14.00	15.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11n(HT20)	1 ~ 11	13.50	14.50	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11ac(VHT20)	1 ~ 11	13.50	14.50	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		SU 20 MHz	1 ~ 11	13.50	14.50	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		RU 26T_20 MHz	1 ~ 11	15.00	16.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		RU 52T_20 MHz	1 ~ 11	15.00	16.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		RU 106T_20 MHz	1 ~ 11	15.00	16.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
RU 242T_20 MHz	1 ~ 11	13.00	14.00	No		
	12	5.00	6.00			
	13	-3.00	-2.00			
WLAN 2.4 GHz	MIMO	802.11g	1 ~ 11	17.00	18.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		802.11n(HT20)	1 ~ 11	16.50	17.50	No
			12	8.00	9.00	
			13	0.00	1.00	
		802.11ac(VHT20)	1 ~ 11	16.50	17.50	No
			12	8.00	9.00	
			13	0.00	1.00	
		SU 20 MHz	1 ~ 11	16.50	17.50	No
			12	8.00	9.00	
			13	0.00	1.00	
		RU 26T_20 MHz	1 ~ 11	18.00	19.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		RU 52T_20 MHz	1 ~ 11	18.00	19.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		RU 106T_20 MHz	1 ~ 11	18.00	19.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		RU 242T_20 MHz	1 ~ 11	16.00	17.00	No
			12	8.00	9.00	
			13	0.00	1.00	

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (12) of (338)



Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
U-NII	Ant.1, Ant.2	802.11a	All Channel	14.00	15.00	Yes
		802.11n(HT20)	All Channel	14.00	15.00	No
		802.11n(HT40)	All Channel	13.00	14.00	No
		802.11ac(VHT20)	All Channel	14.00	15.00	No
		802.11ac(VHT40)	All Channel	13.00	14.00	No
		802.11ac(VHT80)	All Channel	12.00	13.00	No
		SU 20 MHz	All Channel	14.00	15.00	No
		RU 26T_20 MHz	All Channel	10.00	11.00	No
		RU 52T_20 MHz	All Channel	10.00	11.00	No
		RU 106T_20 MHz	All Channel	10.00	11.00	No
		RU 242T_20 MHz	All Channel	10.00	11.00	No
		SU 40 MHz	All Channel	13.00	14.00	No
		RU 26T_40 MHz	All Channel	10.00	11.00	No
		RU 52T_40 MHz	All Channel	10.00	11.00	No
		RU 106T_40 MHz	All Channel	10.00	11.00	No
		RU 242T_40 MHz	All Channel	10.00	11.00	No
		RU 484T_40 MHz	All Channel	10.00	11.00	No
		SU 80 MHz	All Channel	12.00	13.00	No
		RU 26T_80 MHz	All Channel	10.00	11.00	No
		RU 52T_80 MHz	All Channel	10.00	11.00	No
		RU 106T_80 MHz	All Channel	10.00	11.00	No
		RU 242T_80 MHz	All Channel	10.00	11.00	No
RU 484T_80 MHz	All Channel	10.00	11.00	No		
RU 996T_80 MHz	All Channel	10.00	11.00	No		

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (13) of (338)



Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
U-NII	MIMO	802.11a	All Channel	17.00	18.00	No
		802.11n(HT20)	All Channel	17.00	18.00	No
		802.11n(HT40)	All Channel	16.00	17.00	No
		802.11ac(VHT20)	All Channel	17.00	18.00	No
		802.11ac(VHT40)	All Channel	16.00	17.00	No
		802.11ac(VHT80)	All Channel	15.00	16.00	No
		SU 20 MHz	All Channel	17.00	18.00	No
		RU 26T_20 MHz	All Channel	13.00	14.00	No
		RU 52T_20 MHz	All Channel	13.00	14.00	No
		RU 106T_20 MHz	All Channel	13.00	14.00	No
		RU 242T_20 MHz	All Channel	13.00	14.00	No
		SU 40 MHz	All Channel	16.00	17.00	No
		RU 26T_40 MHz	All Channel	13.00	14.00	No
		RU 52T_40 MHz	All Channel	13.00	14.00	No
		RU 106T_40 MHz	All Channel	13.00	14.00	No
		RU 242T_40 MHz	All Channel	13.00	14.00	No
		RU 484T_40 MHz	All Channel	13.00	14.00	No
		SU 80 MHz	All Channel	15.00	16.00	No
		RU 26T_80 MHz	All Channel	13.00	14.00	No
		RU 52T_80 MHz	All Channel	13.00	14.00	No
		RU 106T_80 MHz	All Channel	13.00	14.00	No
		RU 242T_80 MHz	All Channel	13.00	14.00	No
RU 484T_80 MHz	All Channel	13.00	14.00	No		
RU 996T_80 MHz	All Channel	13.00	14.00	No		

2.4.3.2 Reduced WLAN Output Power(Grip Sensor, RCV+Proximity Sensor)

Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
WLAN 2.4 GHz	Ant.1, Ant.2	802.11b	1 ~ 11	8.00	9.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11g	1 ~ 11	8.00	9.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11n(HT20)	1 ~ 11	8.00	9.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11ac(VHT20)	1 ~ 11	8.00	9.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		SU 20 MHz	1 ~ 11	8.00	9.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		RU 26T_20 MHz	1 ~ 11	5.00	6.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		RU 52T_20 MHz	1 ~ 11	5.00	6.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
	RU 106T_20 MHz	1 ~ 11	5.00	6.00	No	
		12	5.00	6.00		
		13	-3.00	-2.00		
	RU 242T_20 MHz	1 ~ 11	5.00	6.00	No	
		12	5.00	6.00		
		13	-3.00	-2.00		
	MIMO	802.11g	1 ~ 11	11.00	12.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		802.11n(HT20)	1 ~ 11	11.00	12.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		802.11ac(VHT20)	1 ~ 11	11.00	12.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		SU 20 MHz	1 ~ 11	11.00	12.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		RU 26T_20 MHz	1 ~ 11	8.00	9.00	No
			12	8.00	9.00	
			13	0.00	1.00	
RU 52T_20 MHz		1 ~ 11	8.00	9.00	No	
		12	8.00	9.00		
		13	0.00	1.00		
RU 106T_20 MHz		1 ~ 11	8.00	9.00	No	
		12	8.00	9.00		
		13	0.00	1.00		
RU 242T_20 MHz	1 ~ 11	8.00	9.00	No		
	12	8.00	9.00			
	13	0.00	1.00			

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (15) of (338)



Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
U-NII	Ant.1, Ant.2	802.11a	All Channel	2.90	3.90	No
		802.11n(HT20)	All Channel	2.90	3.90	No
		802.11n(HT40)	All Channel	2.90	3.90	No
		802.11ac(VHT20)	All Channel	2.90	3.90	No
		802.11ac(VHT40)	All Channel	2.90	3.90	No
		802.11ac(VHT80)	All Channel	2.90	3.90	No
		SU 20 MHz	All Channel	2.90	3.90	No
		RU 26T_20 MHz	All Channel	2.90	3.90	No
		RU 52T_20 MHz	All Channel	2.90	3.90	No
		RU 106T_20 MHz	All Channel	2.90	3.90	No
		RU 242T_20 MHz	All Channel	2.90	3.90	No
		SU 40 MHz	All Channel	2.90	3.90	No
		RU 26T_40 MHz	All Channel	2.90	3.90	No
		RU 52T_40 MHz	All Channel	2.90	3.90	No
		RU 106T_40 MHz	All Channel	2.90	3.90	No
		RU 242T_40 MHz	All Channel	2.90	3.90	No
		RU 484T_40 MHz	All Channel	2.90	3.90	No
		SU 80 MHz	All Channel	2.90	3.90	No
		RU 26T_80 MHz	All Channel	2.90	3.90	No
		RU 52T_80 MHz	All Channel	2.90	3.90	No
		RU 106T_80 MHz	All Channel	2.90	3.90	No
		RU 242T_80 MHz	All Channel	2.90	3.90	No
RU 484T_80 MHz	All Channel	2.90	3.90	No		
RU 996T_80 MHz	All Channel	2.90	3.90	No		

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (16) of (338)



Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
U-NII	MIMO	802.11a	All Channel	5.90	6.90	No
		802.11n(HT20)	All Channel	5.90	6.90	No
		802.11n(HT40)	All Channel	5.90	6.90	No
		802.11ac(VHT20)	All Channel	5.90	6.90	No
		802.11ac(VHT40)	All Channel	5.90	6.90	No
		802.11ac(VHT80)	All Channel	5.90	6.90	No
		SU 20 MHz	All Channel	5.90	6.90	No
		RU 26T_20 MHz	All Channel	5.90	6.90	No
		RU 52T_20 MHz	All Channel	5.90	6.90	No
		RU 106T_20 MHz	All Channel	5.90	6.90	No
		RU 242T_20 MHz	All Channel	5.90	6.90	No
		SU 40 MHz	All Channel	5.90	6.90	No
		RU 26T_40 MHz	All Channel	5.90	6.90	No
		RU 52T_40 MHz	All Channel	5.90	6.90	No
		RU 106T_40 MHz	All Channel	5.90	6.90	No
		RU 242T_40 MHz	All Channel	5.90	6.90	No
		RU 484T_40 MHz	All Channel	5.90	6.90	No
		SU 80 MHz	All Channel	5.90	6.90	No
		RU 26T_80 MHz	All Channel	5.90	6.90	No
		RU 52T_80 MHz	All Channel	5.90	6.90	No
		RU 106T_80 MHz	All Channel	5.90	6.90	No
		RU 242T_80 MHz	All Channel	5.90	6.90	No
RU 484T_80 MHz	All Channel	5.90	6.90	No		
RU 996T_80 MHz	All Channel	5.90	6.90	No		

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (17) of (338)



2.4.3.3 Reduced WLAN Output Power(RSDB)

Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
WLAN 2.4 GHz	Ant.1, Ant.2	802.11b	1 ~ 11	14.00	15.00	Yes
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11g	1 ~ 11	14.00	15.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11n(HT20)	1 ~ 11	13.50	14.50	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11ac(VHT20)	1 ~ 11	13.50	14.50	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		SU 20 MHz	1 ~ 11	13.50	14.50	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		RU 26T_20 MHz	1 ~ 11	14.00	15.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		RU 52T_20 MHz	1 ~ 11	14.00	15.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
	RU 106T_20 MHz	1 ~ 11	14.00	15.00	No	
		12	5.00	6.00		
		13	-3.00	-2.00		
	RU 242T_20 MHz	1 ~ 11	13.00	14.00	No	
		12	5.00	6.00		
		13	-3.00	-2.00		
	MIMO	802.11g	1 ~ 11	17.00	18.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		802.11n(HT20)	1 ~ 11	16.50	17.50	No
			12	8.00	9.00	
			13	0.00	1.00	
		802.11ac(VHT20)	1 ~ 11	16.50	17.50	No
			12	8.00	9.00	
			13	0.00	1.00	
		SU 20 MHz	1 ~ 11	16.50	17.50	No
			12	8.00	9.00	
			13	0.00	1.00	
		RU 26T_20 MHz	1 ~ 11	17.00	18.00	No
			12	8.00	9.00	
			13	0.00	1.00	
RU 52T_20 MHz		1 ~ 11	17.00	18.00	No	
		12	8.00	9.00		
		13	0.00	1.00		
RU 106T_20 MHz		1 ~ 11	17.00	18.00	No	
		12	8.00	9.00		
		13	0.00	1.00		
RU 242T_20 MHz	1 ~ 11	16.00	17.00	No		
	12	8.00	9.00			
	13	0.00	1.00			

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (18) of (338)



Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
U-NII	Ant.1, Ant.2	802.11a	All Channel	10.00	11.00	No
		802.11n(HT20)	All Channel	10.00	11.00	No
		802.11n(HT40)	All Channel	10.00	11.00	No
		802.11ac(VHT20)	All Channel	10.00	11.00	No
		802.11ac(VHT40)	All Channel	10.00	11.00	No
		802.11ac(VHT80)	All Channel	10.00	11.00	No
		SU 20 MHz	All Channel	10.00	11.00	No
		RU 26T_20 MHz	All Channel	10.00	11.00	No
		RU 52T_20 MHz	All Channel	10.00	11.00	No
		RU 106T_20 MHz	All Channel	10.00	11.00	No
		RU 242T_20 MHz	All Channel	10.00	11.00	No
		SU 40 MHz	All Channel	10.00	11.00	No
		RU 26T_40 MHz	All Channel	10.00	11.00	No
		RU 52T_40 MHz	All Channel	10.00	11.00	No
		RU 106T_40 MHz	All Channel	10.00	11.00	No
		RU 242T_40 MHz	All Channel	10.00	11.00	No
		RU 484T_40 MHz	All Channel	10.00	11.00	No
		SU 80 MHz	All Channel	10.00	11.00	No
		RU 26T_80 MHz	All Channel	10.00	11.00	No
		RU 52T_80 MHz	All Channel	10.00	11.00	No
		RU 106T_80 MHz	All Channel	10.00	11.00	No
		RU 242T_80 MHz	All Channel	10.00	11.00	No
RU 484T_80 MHz	All Channel	10.00	11.00	No		
RU 996T_80 MHz	All Channel	10.00	11.00	No		

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (19) of (338)



Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
U-NII	MIMO	802.11a	All Channel	13.00	14.00	No
		802.11n(HT20)	All Channel	13.00	14.00	No
		802.11n(HT40)	All Channel	13.00	14.00	No
		802.11ac(VHT20)	All Channel	13.00	14.00	No
		802.11ac(VHT40)	All Channel	13.00	14.00	No
		802.11ac(VHT80)	All Channel	13.00	14.00	No
		SU 20 MHz	All Channel	13.00	14.00	No
		RU 26T_20 MHz	All Channel	13.00	14.00	No
		RU 52T_20 MHz	All Channel	13.00	14.00	No
		RU 106T_20 MHz	All Channel	13.00	14.00	No
		RU 242T_20 MHz	All Channel	13.00	14.00	No
		SU 40 MHz	All Channel	13.00	14.00	No
		RU 26T_40 MHz	All Channel	13.00	14.00	No
		RU 52T_40 MHz	All Channel	13.00	14.00	No
		RU 106T_40 MHz	All Channel	13.00	14.00	No
		RU 242T_40 MHz	All Channel	13.00	14.00	No
		RU 484T_40 MHz	All Channel	13.00	14.00	No
		SU 80 MHz	All Channel	13.00	14.00	No
		RU 26T_80 MHz	All Channel	13.00	14.00	No
		RU 52T_80 MHz	All Channel	13.00	14.00	No
		RU 106T_80 MHz	All Channel	13.00	14.00	No
		RU 242T_80 MHz	All Channel	13.00	14.00	No
RU 484T_80 MHz	All Channel	13.00	14.00	No		
RU 996T_80 MHz	All Channel	13.00	14.00	No		

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (20) of (338)



2.4.3.4 Maximum WLAN Output Power(RSDB+Grip Sensor, RSDB+RCV +Proximity Sensor)

Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
WLAN 2.4 GHz	Ant.1, Ant.2	802.11b	1 ~ 11	5.00	6.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11g	1 ~ 11	5.00	6.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11n(HT20)	1 ~ 11	5.00	6.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		802.11ac(VHT20)	1 ~ 11	5.00	6.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		SU 20 MHz	1 ~ 11	5.00	6.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		RU 26T_20 MHz	1 ~ 11	5.00	6.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		RU 52T_20 MHz	1 ~ 11	5.00	6.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
		RU 106T_20 MHz	1 ~ 11	5.00	6.00	No
			12	5.00	6.00	
			13	-3.00	-2.00	
	RU 242T_20 MHz	1 ~ 11	5.00	6.00	No	
		12	5.00	6.00		
		13	-3.00	-2.00		
	MIMO	802.11g	1 ~ 11	8.00	9.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		802.11n(HT20)	1 ~ 11	8.00	9.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		802.11ac(VHT20)	1 ~ 11	8.00	9.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		SU 20 MHz	1 ~ 11	8.00	9.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		RU 26T_20 MHz	1 ~ 11	8.00	9.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		RU 52T_20 MHz	1 ~ 11	8.00	9.00	No
			12	8.00	9.00	
			13	0.00	1.00	
		RU 106T_20 MHz	1 ~ 11	8.00	9.00	No
			12	8.00	9.00	
			13	0.00	1.00	
RU 242T_20 MHz		1 ~ 11	8.00	9.00	No	
		12	8.00	9.00		
		13	0.00	1.00		

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (21) of (338)



Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
U-NII	Ant.1, Ant.2	802.11a	All Channel	1.00	2.00	No
		802.11n(HT20)	All Channel	1.00	2.00	No
		802.11n(HT40)	All Channel	1.00	2.00	No
		802.11ac(VHT20)	All Channel	1.00	2.00	No
		802.11ac(VHT40)	All Channel	1.00	2.00	No
		802.11ac(VHT80)	All Channel	1.00	2.00	No
		SU 20 MHz	All Channel	1.00	2.00	No
		RU 26T_20 MHz	All Channel	1.00	2.00	No
		RU 52T_20 MHz	All Channel	1.00	2.00	No
		RU 106T_20 MHz	All Channel	1.00	2.00	No
		RU 242T_20 MHz	All Channel	1.00	2.00	No
		SU 40 MHz	All Channel	1.00	2.00	No
		RU 26T_40 MHz	All Channel	1.00	2.00	No
		RU 52T_40 MHz	All Channel	1.00	2.00	No
		RU 106T_40 MHz	All Channel	1.00	2.00	No
		RU 242T_40 MHz	All Channel	1.00	2.00	No
		RU 484T_40 MHz	All Channel	1.00	2.00	No
		SU 80 MHz	All Channel	1.00	2.00	No
		RU 26T_80 MHz	All Channel	1.00	2.00	No
		RU 52T_80 MHz	All Channel	1.00	2.00	No
		RU 106T_80 MHz	All Channel	1.00	2.00	No
		RU 242T_80 MHz	All Channel	1.00	2.00	No
RU 484T_80 MHz	All Channel	1.00	2.00	No		
RU 996T_80 MHz	All Channel	1.00	2.00	No		

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (22) of (338)



Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
U-NII	MIMO	802.11a	All Channel	4.00	5.00	No
		802.11n(HT20)	All Channel	4.00	5.00	No
		802.11n(HT40)	All Channel	4.00	5.00	No
		802.11ac(VHT20)	All Channel	4.00	5.00	No
		802.11ac(VHT40)	All Channel	4.00	5.00	No
		802.11ac(VHT80)	All Channel	4.00	5.00	No
		SU 20 MHz	All Channel	4.00	5.00	No
		RU 26T_20 MHz	All Channel	4.00	5.00	No
		RU 52T_20 MHz	All Channel	4.00	5.00	No
		RU 106T_20 MHz	All Channel	4.00	5.00	No
		RU 242T_20 MHz	All Channel	4.00	5.00	No
		SU 40 MHz	All Channel	4.00	5.00	No
		RU 26T_40 MHz	All Channel	4.00	5.00	No
		RU 52T_40 MHz	All Channel	4.00	5.00	No
		RU 106T_40 MHz	All Channel	4.00	5.00	No
		RU 242T_40 MHz	All Channel	4.00	5.00	No
		RU 484T_40 MHz	All Channel	4.00	5.00	No
		SU 80 MHz	All Channel	4.00	5.00	No
		RU 26T_80 MHz	All Channel	4.00	5.00	No
		RU 52T_80 MHz	All Channel	4.00	5.00	No
		RU 106T_80 MHz	All Channel	4.00	5.00	No
RU 242T_80 MHz	All Channel	4.00	5.00	No		
RU 484T_80 MHz	All Channel	4.00	5.00	No		
RU 996T_80 MHz	All Channel	4.00	5.00	No		

2.4.3.5 Maximum Bluetooth Output Power

Band	Ant.	Mode	Channel	Output Power (dB m)		
				Target	Max. Allowed	SAR Test
Bluetooth	Ant.1	BDR	All Channel	11.50	12.50	Yes
		EDR	All Channel	11.00	12.00	No
		LE 1M(GFSK)	All Channel	6.50	7.00	No
		LE 2M(GFSK)	All Channel	7.00	8.00	No

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (23) of (338)



2.5 SAR Test Configurations

2.5.1 #DUT Antenna Locations

The overall dimensions of this device are > 20 cm. A diagram showing the location of the device antennas can be found in Appendix E.

2.5.2 SAR Test Exclusion Considerations_(Maximum Tune-up Power)

<Body Configuration>

Band / Ant.	Freq. [MHz]	Output Power		Separation distances [mm]					SAR Exemption				
		dBm	mW	Rear	Left	Right	Top	Bot.	Rear	Left	Right	Top	Bot.
GSM850	848.8	34.50	2818	5	87	5	5	192	519.25 Measure	Measure	519.25 Measure	519.25 Measure	Measure
GSM850	848.8	Note 5) 25.47	352	5	87	5	5	192	64.86 Measure	372mW EXEMPT	64.86 Measure	64.86 Measure	966mW EXEMPT
GSM1900	1909.8	31.50	1413	5	87	5	5	192	390.54 Measure	Measure	390.54 Measure	390.54 Measure	1529mW EXEMPT
WCDMA 2	1907.6	24.50	282	5	87	5	5	192	77.90 Measure	479mW EXEMPT	77.90 Measure	77.90 Measure	1529mW EXEMPT
WCDMA 4	1752.6	24.50	282	5	87	5	5	192	74.67 Measure	483mW EXEMPT	74.67 Measure	74.67 Measure	1533mW EXEMPT
WCDMA 5	846.6	24.50	282	5	87	5	5	192	51.89 Measure	372mW EXEMPT	51.89 Measure	51.89 Measure	964mW EXEMPT
LTE 2	1909.3	24.50	282	5	87	5	5	192	77.93 Measure	479mW EXEMPT	77.93 Measure	77.93 Measure	1529mW EXEMPT
LTE 5	848.3	24.50	282	5	87	5	5	192	51.95 Measure	372mW EXEMPT	51.95 Measure	51.95 Measure	966mW EXEMPT
LTE 12	715.3	24.50	282	5	87	5	5	192	47.70 Measure	354mW EXEMPT	47.70 Measure	47.70 Measure	855mW EXEMPT
LTE 13	784.5	24.50	282	5	87	5	5	192	49.95 Measure	363mW EXEMPT	49.95 Measure	49.95 Measure	912mW EXEMPT
LTE 41	2687.5	24.50	282	5	87	5	5	192	92.46 Measure	461mW EXEMPT	92.46 Measure	92.46 Measure	1511mW EXEMPT
LTE 66	1779.3	25.00	316	5	87	5	5	192	84.30 Measure	482mW EXEMPT	84.30 Measure	84.30 Measure	1532mW EXEMPT
2.4 GHz Ant.1	2480	19.00	79	5	5	113	26	162	24.88 Measure	24.88 Measure	725mW EXEMPT	4.78 Measure	1215mW EXEMPT
5.3 GHz Ant.1	5320	15.00	32	5	5	113	26	162	14.76 Measure	14.76 Measure	695mW EXEMPT	2.84 EXEMPT	1185mW EXEMPT
5.6 GHz Ant.1	5720	15.00	32	5	5	113	26	162	15.31 Measure	15.31 Measure	693mW EXEMPT	2.94 EXEMPT	1183mW EXEMPT
5.8 GHz Ant.1	5825	15.00	32	5	5	113	26	162	15.45 Measure	15.45 Measure	692mW EXEMPT	2.97 EXEMPT	1182mW EXEMPT
2.4 GHz Ant.2	2480	19.00	79	5	25	89	5	198	24.88 Measure	4.98 Measure	485mW EXEMPT	24.88 Measure	1575mW EXEMPT
5.3 GHz Ant.2	5320	15.00	32	5	25	89	5	198	14.76 Measure	2.95 EXEMPT	455mW EXEMPT	14.76 Measure	1545mW EXEMPT
5.6 GHz Ant.2	5720	15.00	32	5	25	89	5	198	15.31 Measure	3.06 Measure	453mW EXEMPT	15.31 Measure	1543mW EXEMPT
5.8 GHz Ant.2	5825	15.00	32	5	25	89	5	198	15.45 Measure	3.09 Measure	452mW EXEMPT	15.45 Measure	1542mW EXEMPT
Bluetooth	2480	12.50	18	5	5	113	26	162	5.67 Measure	5.67 Measure	725mW EXEMPT	1.09 EXEMPT	1215mW EXEMPT

Note 1: For distances < 5mm, a distance of 5mm is used to determine SAR exclusion and estimated SAR value.

Note 2: Output power is the maximum rated power (including tune-up or manufacturing tolerances) and includes source-based averaging.

Note 3: If the antenna separation distance is > 50mm then the value listed is the output power threshold, above which SAR measurement is required. For separation <= 50mm the value is the KDB 447498 calculated value and must be less than 3.0 for SAR exemption.

Note 4: Formulas round separation distance to nearest mm and power to nearest mW before calculating thresholds or exemption values.

Note 5: In the case of GSM850 mode, it was Calculated by applying frame power for SAR test conditions.

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (24) of (338)



2.5.3 SAR Test Exclusion Considerations_(Reduced Tune-up Power)

< Head Configuration – RCV + Proximity Sensor >

Band / Ant.	Freq. [MHz]	Output Power		Separation distances [mm]	SAR Exemption
		dBm	mW	Head	Head
GSM850	848.8	24.50	282	5	51.96 Measure
GSM1900	1909.8	24.00	251	5	69.37 Measure
WCDMA 2	1907.6	14.50	28	5	7.73 Measure
WCDMA 4	1752.6	15.50	35	5	9.27 Measure
WCDMA 5	846.6	19.50	89	5	16.38 Measure
LTE 2	1909.3	14.50	28	5	7.74 Measure
LTE 5	848.3	19.50	89	5	16.39 Measure
LTE 12	715.3	20.50	112	5	18.94 Measure
LTE 13	784.5	21.00	126	5	22.32 Measure
LTE 41	2687.5	18.50	71	5	23.28 Measure
LTE 66	1779.3	15.00	32	5	8.54 Measure
2.4 GHz Ant.1	2480	9.00	8	5	2.52 EXEMPT
5.3 GHz Ant.1	5320	3.90	2	5	0.92 EXEMPT
5.6 GHz Ant.1	5720	3.90	2	5	0.96 EXEMPT
5.8 GHz Ant.1	5825	3.90	2	5	0.97 EXEMPT
2.4 GHz Ant.2	2480	9.00	8	5	2.52 EXEMPT
5.3 GHz Ant.2	5320	3.90	2	5	0.92 EXEMPT
5.6 GHz Ant.2	5720	3.90	2	5	0.96 EXEMPT
5.8 GHz Ant.2	5825	3.90	2	5	0.97 EXEMPT

Note 1: For distances < 5mm, a distance of 5mm is used to determine SAR exclusion and estimated SAR value.

Note 2: Output power is the maximum rated power (including tune-up or manufacturing tolerances) and includes source-based averaging.

Note 3: If the antenna separation distance is > 50mm then the value listed is the output power threshold, above which SAR measurement is required. For separation <= 50mm the value is the KDB 447498 calculated value and must be less than 3.0 for SAR exemption.

Note 4: Formulas round separation distance to nearest mm and power to nearest mW before calculating thresholds or exemption values.

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (25) of (338)



<Body Configuration – Grip Sensor>

Band / Ant.	Freq. [MHz]	Output Power		Separation distances [mm]					SAR Exemption				
		dBm	mW	Rear	Left	Right	Top	Bot.	Rear	Left	Right	Top	Bot.
GSM850	848.8	24.50	282	5	87	5	5	192	51.96 Measure	Non-Power-Back-off	51.96 Measure	51.96 Measure	Non-Power-Back-off
GSM1900	1909.8	21.50	141	5	87	5	5	192	38.97 Measure		38.97 Measure	38.97 Measure	
WCDMA 2	1907.6	14.50	28	5	87	5	5	192	7.73 Measure		7.73 Measure	7.73 Measure	
WCDMA 4	1752.6	15.50	35	5	87	5	5	192	9.27 Measure		9.27 Measure	9.27 Measure	
WCDMA 5	846.6	20.50	112	5	87	5	5	192	20.61 Measure		20.61 Measure	20.61 Measure	
LTE 2	1909.3	14.50	28	5	87	5	5	192	7.74 Measure		7.74 Measure	7.74 Measure	
LTE 5	848.3	19.50	89	5	87	5	5	192	16.39 Measure		16.39 Measure	16.39 Measure	
LTE 12	715.3	17.50	56	5	87	5	5	192	9.47 Measure		9.47 Measure	9.47 Measure	
LTE 13	784.5	17.50	56	5	87	5	5	192	9.92 Measure		9.92 Measure	9.92 Measure	
LTE 41	2687.5	14.50	28	5	87	5	5	192	9.18 Measure		9.18 Measure	9.18 Measure	
LTE 66	1779.3	15.00	32	5	87	5	5	192	8.54 Measure	8.54 Measure	8.54 Measure		
2.4 GHz Ant.1	2480	9.00	8	5	5	113	26	162	2.52 EXEMPT	Non-Power-Back-off	Non-Power-Back-off	Non-Power-Back-off	
5.3 GHz Ant.1	5320	3.90	2	5	5	113	26	162	0.92 EXEMPT				
5.6 GHz Ant.1	5720	3.90	2	5	5	113	26	162	0.96 EXEMPT				
5.8 GHz Ant.1	5825	3.90	2	5	5	113	26	162	0.97 EXEMPT				
2.4 GHz Ant.2	2480	9.00	8	5	25	89	5	198	2.52 EXEMPT	Non-Power-Back-off	Non-Power-Back-off	Non-Power-Back-off	
5.3 GHz Ant.2	5320	3.90	2	5	25	89	5	198	0.92 EXEMPT				
5.6 GHz Ant.2	5720	3.90	2	5	25	89	5	198	0.96 EXEMPT				
5.8 GHz Ant.2	5825	3.90	2	5	25	89	5	198	0.97 EXEMPT				

Note 1: For distances < 5mm, a distance of 5mm is used to determine SAR exclusion and estimated SAR value.

Note 2: Output power is the maximum rated power (including tune-up or manufacturing tolerances) and includes source-based averaging.

Note 3: If the antenna separation distance is > 50mm then the value listed is the output power threshold, above which SAR measurement is required. For separation <= 50mm the value is the KDB 447498 calculated value and must be less than 3.0 for SAR exemption.

Note 4: Formulas round separation distance to nearest mm and power to nearest mW before calculating thresholds or exemption values.

Note 5: Non-power back-off means Grip Sensor is not applied.(This is calculated as the maximum output power in section 2.5.2)

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (26) of (338)

**SAR Test Exclusion (Maximum Output Power)**

Mode	Device Edge for SAR Testing (Front View)					
	Front	Rear	Left Edge	Right Edge	Top	Bottom
GPRS 850	No	Yes	Note)Yes	Yes	Yes	No
GPRS 1900	No	Yes	Yes	Yes	Yes	No
WCDMA Band II	No	Yes	Note)Yes	Yes	Yes	No
WCDMA Band IV	No	Yes	Note)Yes	Yes	Yes	No
WCDMA Band V	No	Yes	Note)Yes	Yes	Yes	No
LTE Band 2	No	Yes	Note)Yes	Yes	Yes	No
LTE Band 5	No	Yes	Note)Yes	Yes	Yes	No
LTE Band 12	No	Yes	Note)Yes	Yes	Yes	No
LTE Band 13	No	Yes	Note)Yes	Yes	Yes	No
LTE Band 25	No	Yes	Note)Yes	Yes	Yes	No
LTE Band 26	No	Yes	Note)Yes	Yes	Yes	No
LTE Band 41	No	Yes	Note)Yes	Yes	Yes	No
LTE Band 66	No	Yes	Note)Yes	Yes	Yes	No
2.4 GHz WLAN (Ant.1)	No	Yes	Yes	Note)Yes	Yes	No
U-NII-2A (Ant.1)	No	Yes	Yes	Note)Yes	No	No
U-NII-2C (Ant.1)	No	Yes	Yes	Note)Yes	No	No
U-NII-3 (Ant.1)	No	Yes	Yes	Note)Yes	No	No
2.4 GHz WLAN (Ant.2)	No	Yes	Yes	Note)Yes	Yes	No
U-NII-2A (Ant.2)	No	Yes	No	Note)Yes	Yes	No
U-NII-2C (Ant.2)	No	Yes	Yes	Note)Yes	Yes	No
U-NII-3 (Ant.2)	No	Yes	Yes	Note)Yes	Yes	No
Bluetooth (Ant.1)	No	Yes	Yes	Note)Yes	No	No

Note : The conservative estimated SAR was measured to exclude the simultaneous transmission SAR test.

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (27) of (338)

**SAR Test Exclusion (Reduced Tune-up Power - Grip Sensor)**

Mode	Device Edge for SAR Testing (Front View)					
	Front	Rear	Left Edge	Right Edge	Top	Bottom
GPRS 850	No	Yes	N/A	Yes	Yes	N/A
GPRS 1900	No	Yes		Yes	Yes	
WCDMA Band II	No	Yes		Yes	Yes	
WCDMA Band IV	No	Yes		Yes	Yes	
WCDMA Band V	No	Yes		Yes	Yes	
LTE Band 2	No	Yes		Yes	Yes	
LTE Band 5	No	Yes		Yes	Yes	
LTE Band 12	No	Yes		Yes	Yes	
LTE Band 13	No	Yes		Yes	Yes	
LTE Band 25	No	Yes		Yes	Yes	
LTE Band 26	No	Yes		Yes	Yes	
LTE Band 41	No	Yes		Yes	Yes	
LTE Band 66	No	Yes	Yes	Yes		
2.4 GHz WLAN (Ant.1)	No	No	No	N/A	N/A	N/A
U-NII-2A (Ant.1)	No	No	No			
U-NII-2C (Ant.1)	No	No	No			
U-NII-3 (Ant.1)	No	No	No			
2.4 GHz WLAN (Ant.2)	No	No	N/A	N/A	No	N/A
U-NII-2A (Ant.2)	No	No			No	
U-NII-2C (Ant.2)	No	No			No	
U-NII-3 (Ant.2)	No	No			No	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (28) of (338)



2.6 SAR Test Methods and Procedures

The tests documented in this report were performed in accordance with IEEE 1528-2013 and the following published KDB procedures:

- IEEE 1528-2013
- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D01 General RF Exposure Guidance v06
- 616217 D04 SAR for laptop and tablets v01r02 (Proximity Sensor)
- 648474 D04 Handset SAR v01r03
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D01 3G SAR Procedures v03r01
- 941225 D05 SAR for LTE Devices v02r05
- 941225 D05A LTE Rel. 10 KDB Inquiry Sheet v01r02
- October 2014 TCB Workshop Notes (Other LTE Considerations)
- October 2016 TCB Workshop Notes (Bluetooth Duty Factor)
- April 2018 TCB Workshop Notes (LTE Carrier Aggregation)
- April 2019 TCB Workshop Notes (Tissue Simulation Liquids)



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (29) of (338)



3. #LTE Information

LTE Information					
Form Factor	Tablet				
Frequency Range of each LTE transmission band	LTE Band 2 (1 850.7 MHz ~ 1 909.3 MHz) LTE Band 4 (1 710.7 MHz ~ 1 754.3 MHz) LTE Band 5 (824.7 MHz ~ 848.3 MHz) LTE Band 12 (699.7 MHz ~ 715.3 MHz) LTE Band 13 (779.5 MHz ~ 784.5 MHz) LTE Band 17 (706.5 MHz ~ 713.5 MHz) LTE Band 41 (2 498.5 MHz ~ 2 687.5 MHz) LTE Band 66 (1 710.7 MHz ~ 1 779.3 MHz)				
Channel Bandwidths	LTE Band 2: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 4: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 5: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz LTE Band 13: 5 MHz, 10 MHz LTE Band 17: 5 MHz, 10 MHz LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz LTE Band 66: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 2: 1.4 MHz	1 850.7 (18 607)		1 880.0 (18 900)		1 909.3 (19 193)
LTE Band 2: 3 MHz	1 851.5 (18 615)		1 880.0 (18 900)		1 908.5 (19 185)
LTE Band 2: 5 MHz	1 852.5 (18 625)		1 880.0 (18 900)		1 907.5 (19 175)
LTE Band 2: 10 MHz	1 855.0 (18 650)		1 880.0 (18 900)		1 905.0 (19 150)
LTE Band 2: 15 MHz	1 857.5 (18 675)		1 880.0 (18 900)		1 902.5 (19 125)
LTE Band 2: 20 MHz	1 860.0 (18 700)		1 880.0 (18 900)		1 900.0 (19 100)
LTE Band 4: 1.4 MHz	1 710.7 (19 957)		1 732.5 (20 175)		1 754.3 (20 393)
LTE Band 4: 3 MHz	1 711.5 (19 965)		1 732.5 (20 175)		1 753.5 (20 385)
LTE Band 4: 5 MHz	1 712.5 (19 975)		1 732.5 (20 175)		1 752.5 (20 375)
LTE Band 4: 10 MHz	1 715.0 (20 000)		1 732.5 (20 175)		1 750.0 (20 350)
LTE Band 4: 15 MHz	1 717.5 (20 025)		1 732.5 (20 175)		1 747.5 (20 325)
LTE Band 4: 20 MHz	1 720.0 (20 050)		1 732.5 (20 175)		1 745.0 (20 300)
LTE Band 5: 1.4 MHz	824.7 (20 407)		836.5 (20 525)		848.3 (20 643)
LTE Band 5: 3 MHz	825.5 (20 415)		836.5 (20 525)		847.5 (20 635)
LTE Band 5: 5 MHz	826.5 (20 425)		836.5 (20 525)		846.5 (20 625)
LTE Band 5: 10 MHz	829.0 (20 450)		836.5 (20 525)		844.0 (20 600)
LTE Band 12: 1.4 MHz	699.7 (23 017)		707.5 (23 095)		715.3 (23 173)
LTE Band 12: 3 MHz	700.5 (23 025)		707.5 (23 095)		714.5 (23 655)
LTE Band 12: 5 MHz	701.5 (23 035)		707.5 (23 095)		713.5 (23 155)
LTE Band 12: 10 MHz	704.0 (23 060)		707.5 (23 095)		711.0 (23 130)
LTE Band 13: 5 MHz	779.5 (23 205)		782.0 (23 230)		784.5 (23 255)
LTE Band 13: 10 MHz	-		782.0 (23 230)		-

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (30) of (338)



Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 17: 5 MHz	706.5 (23 755)		710.0 (23 790)		713.5 (23 825)
LTE Band 17: 10 MHz	709.0 (23 780)		710.0 (23 790)		711.0 (23 800)
LTE Band 41: 5 MHz	2 506.0 (39 750)	2 549.5 (40 185)	2 593.0 (40 620)	2 636.5 (41 055)	2 680.0 (41 490)
LTE Band 41: 10 MHz	2 506.0 (39 750)	2 549.5 (40 185)	2 593.0 (40 620)	2 636.5 (41 055)	2 680.0 (41 490)
LTE Band 41: 15 MHz	2 506.0 (39 750)	2 549.5 (40 185)	2 593.0 (40 620)	2 636.5 (41 055)	2 680.0 (41 490)
LTE Band 41: 20 MHz	2 506.0 (39 750)	2 549.5 (40 185)	2 593.0 (40 620)	2 636.5 (41 055)	2 680.0 (41 490)
LTE Band 66: 1.4 MHz	1 710.7 (131 979)		1 745.0 (132 322)		1 779.3 (132 665)
LTE Band 66: 3 MHz	1 711.5 (131 987)		1 745.0 (132 322)		1 778.5 (132 657)
LTE Band 66: 5 MHz	1 712.5 (131 997)		1 745.0 (132 322)		1 777.5 (132 647)
LTE Band 66: 10 MHz	1 715.0 (132 022)		1 745.0 (132 322)		1 775.0 (132 622)
LTE Band 66: 15 MHz	1 717.5 (132 047)		1 745.0 (132 322)		1 772.5 (132 597)
LTE Band 66: 20 MHz	1 720.0 (132 072)		1 745.0 (132 322)		1 770.0 (132 572)
UE Category	UL: 5, DL: 11				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3 ~ 6.2.5?(manufacturer attestation to be provided)	YES				
A-MPR(Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	This device only supports LTE DL CA aggregation.				
LTE Additional Information	This device supports full CA features on 3GPP Release 10. It supports carrier aggregation as shown in Appendix C. Uplink communications are done on the PCC. The following LTE Release 10 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, WIFI Offloading, MDH, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

4. Specific Absorption Rate

4.1 Introduction

The SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational / controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

4.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$\text{SAR} = \frac{d}{dt} \left(\frac{dW}{dm} \right) = \frac{d}{dt} \left(\frac{dW}{\rho dv} \right)$$

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

$$\text{SAR} = C \left(\frac{\delta T}{\delta t} \right)$$

Where: C is the specific heat capacity, δT is the temperature rise and δt is the exposure duration, or related to the electrical field in the tissue by

$$\text{SAR} = \frac{\sigma |E|^2}{\rho}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength. However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

5. SAR Measurement Procedures

5.1 SAR Scan Procedures

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The Minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 1.4 mm. This distance cannot be smaller than the Distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan & Zoom Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot and Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly. Area Scan & Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04.

		≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface		5 mm ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2)$ mm 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location		$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{Area}, \Delta y_{Area}$		≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
		When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: $\Delta x_{Zoom}, \Delta y_{Zoom}$		≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$	≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface $\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5 · $\Delta z_{Zoom}(n-1)$ mm	
Minimum zoom scan volume	x, y, z	≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details. * When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.			

Step 3: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

6. SAR Measurement Configurations

6.6 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 7). Per FCC KDB Publication 648474 D04v01r03, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is $> 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

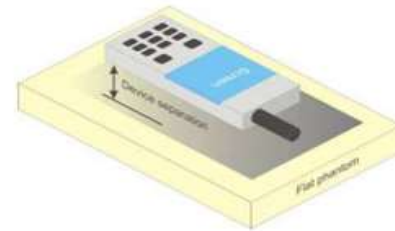


Figure 7
Sample Body-Worn Diagram

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

6.9 Proximity Sensor Considerations

This device uses a power reduction mechanism to reduce output powers in certain use conditions when the device is used close to the user's body.

When the device's antenna is within a certain distance of the user, the sensor activates and reduces the maximum allowed output power. However, the sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, additional evaluation is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a non-reduced output power level. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional test positions.

7. RF Exposure Limits

UNCONTROLLED ENVIRONMENTS are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

CONTROLLED ENVIRONMENTS are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Partial Peak SAR ¹⁾ (Partial)	1.60 mW/g	8.00 mW/g
Partial Average SAR ²⁾ (Whole Body)	0.08 mW/g	0.40 mW/g
Partial Peak SAR ³⁾ (Hands/Feet/Ankle/Wrist)	4.00 mW/g	20.00 mW/g

- 1) The spatial Peak value of the SAR averaged over any 1g gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
- 2) The spatial Average value of the SAR averaged over the whole body.
- 3) The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

8. FCC SAR General Measurement Procedures

8.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v06, When SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as reported SAR. Test highest reported SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

8.2 3G SAR Test Reduction Procedure

In FCC KDB Publication 941225 D01v03r01, certain transmission modes within a frequency band and wireless mode evaluated for SAR are defined as primary modes. The equivalent modes considered for SAR test reduction are denoted as secondary modes. When the maximum output power including tune-up tolerance specified for production units in a secondary mode is ≤ 0.25 dB higher than the primary mode or when the highest reported SAR of the primary mode, scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode, is ≤ 1.2 W/kg, SAR measurements are not required for the secondary mode. These criteria are referred to as the 3G SAR test reduction procedure. When the 3G SAR test reduction procedure is not satisfied, SAR measurements are additionally required for the secondary mode.

8.3 Procedures Used to Establish RF Signal for SAR

The following procedures are according to FCC KDB Publication 941225 D01v03r01 "3G SAR Measurement Procedures."

The device is placed into a simulated call using a base station simulator in a RF shielded chamber. Establishing connections in this manner ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. Devices under test are evaluated prior to testing, with a fully charged battery and were configured to operate at maximum output power. In order to verify that the device is tested throughout the SAR test at maximum output power, the SAR measurement system measures a "point SAR" at an arbitrary reference point at the start and end of the 1 gram SAR evaluation, to assess for any power drifts during the evaluation. If the power drift deviates by more than 5%, the SAR test and drift measurements are repeated.

8.4 SAR Measurement Conditions for UMTS

8.4.1 Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in sec. 5.2 of 3GPP TS 34.121, using the appropriate RMC with TPC (transmit power control) set to all "1s" or applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HS-DPCCH etc) are tabulated in this test report. All configurations that are not supported by the DUT or cannot be measured due to technical or equipment limitations are identified.

8.4.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.4.3 Body SAR measurements

SAR for body exposure configurations is measured using the 12.2kbps RMC with the TPC bits all "1s". the 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using and applicable RMC configuration with the corresponding spreading code or DPDCHn, for the highest reported SAR configuration in 12.2kbps RMC.

8.4.4 SAR Measurements with Rel. 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using and FRC with H-SET 1 in Sub-test and a 12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to release 6 HSPA test procedures. 8.4.5 SAR Measurement with Rel.6 HSUPA The 3G SAR test Reduction Procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, Using H-Set 1 and QPSK for FRC and a 12.2kbps RMC configured in Test Loop Mode 1 and Power Control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

8.4.5 SAR Measurements with Rel. 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA.

8.4.6 SAR Measurements with Rel. 8 DC-HSDPA

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable

8.5 SAR Measurement Conditions for LTE

LTE modes are tested according to FCC KDB 941225 D05v02r05 publication. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluation SAR [4]. The R&S CMW500 or Anritsu MT8820C simulators are used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

8.5.1 Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

8.5.2 MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36. 101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

8.5.3 A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator

8.5.4 Required RB Size and RB offsets for SAR testing

According to FCC KDB 941225 D05v02r05

1. Per sec 4.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
 - a. The required channel and offset combination with the highest maximum output power is required for SAR.
 - b. When the reported SAR is ≤ 0.8 W/Kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
 - c. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel
2. Per Sec 4.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Sec 4.2.1.
3. Per Sec. 4.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
4. Per Sec. 4.2.4 and 4.3, SAR test for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sec. 4.2.1 through 4.2.3 is less than or equal to 1/2 dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is < 1.45 W/Kg.

8.5.5 LTE(TDD) Considerations

According to KDB 941225 D05v02r05, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33 %) using Uplink-downlink configuration 0 and Special sub-frame configuration 6.

LTE TDD Band supports 3GPP TS 36.211 section 4.2 for Type 2 Frame and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special sub frame configurations.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

Special subframe configuration n	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$(1+X) \cdot 2192 \cdot T_s$	$(1+X) \cdot 2560 \cdot T_s$	$7680 \cdot T_s$	$(1+X) \cdot 2192 \cdot T_s$	$(1+X) \cdot 2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$		
5	$6592 \cdot T_s$	$(2+X) \cdot 2192 \cdot T_s$	$(2+X) \cdot 2560 \cdot T_s$	$20480 \cdot T_s$	$(2+X) \cdot 2192 \cdot T_s$	$(2+X) \cdot 2560 \cdot T_s$
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-
10	$13168 \cdot T_s$	$13152 \cdot T_s$	$12800 \cdot T_s$	-	-	-

Table 4.2-2: Uplink-downlink configurations

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number										
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	
1	5 ms	D	S	U	U	D	D	S	U	U	D	
2	5 ms	D	S	U	D	D	D	S	U	D	D	
3	10 ms	D	S	U	U	U	D	D	D	D	D	
4	10 ms	D	S	U	U	D	D	D	D	D	D	
5	10 ms	D	S	U	D	D	D	D	D	D	D	
6	5 ms	D	S	U	U	U	D	S	U	U	D	

Calculated Duty Cycle – Extended cyclic prefix in uplink x (Ts) x # of S + # of U

Example for calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle = $(5120 \times [1/(15000 \times 2048)] \times 2 + 0.006)/0.01 = 63.33 \%$

$T_s = 1/(15000 \times 2048)$ seconds

8.6 SAR Testing with 802.11 Transmitters

The normal network operating configurations are not suitable for measuring the SAR of 802.11 a/b/g transmitters. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure the results are consistent and reliable.

8.6.1 General Device Setup

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters. A periodic duty factor is required for current generation SAR systems to measure SAR. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 – 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR is scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

8.6.2 U-NII-1 and U-NII-2A

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg. When different maximum output powers is not required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.6.3 U-NII-2C and U-NII-3

The frequency range covered by U-NII-2C and U-NII-3 is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification. Unless band gap channels are permanently disabled, SAR must be considered for these channels. When band gap channels are disabled, each band is tested independently according to the normally required OFDM SAR measurement and probe calibration frequency point requirements.

8.6.4 Initial Test Position Procedure

For exposure conditions with multiple test positions, such as handset operating next to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all positions in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.

8.6.5 2.4 GHz SAR Test Requirement

SAR is measured for 2.4 GHz 802.11b DSSS using either the fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following.

- 1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- 2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel; i.e., all channels require testing.

2.4 GHz 802.11g/n OFDM are additionally evaluated for SAR if highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test Configuration Procedures should be followed.

8.6.6 OFDM Transmission Mode and SAR Test Channel Selection

For the 2.4 GHz and 5 GHz band, when the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, 802.11n and 802.11ac or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. When maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

8.6.7 Initial Test Configuration Procedure

For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, and lowest data rate. If the average RF output powers of the highest identical transmission modes are within 0.25 dB of each other, mid channel of the transmission mode with highest average RF output power is the initial test channel. Otherwise, the channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements.

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (41) of (338)

**8.6.8 Subsequent Test Configuration Procedures**

For OFDM configurations in each frequency band and aggregated band, SAR is evaluated for initial test configuration using the fixed test position or the initial test position procedure. When the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the subsequent test configuration to initial test configuration, is ≤ 1.2 W/kg, no additional SAR tests for the subsequent test configurations are required. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (42) of (338)



9. RF Average Conducted Output Power

9.1 GSM Average Conducted Output Power (Maximum Average Power)

Maximum Burst-Average Output Power (dB m)										
Band	Channel	GSM	GPRS (GMSK)				EGPRS (8-PSK)			
		Voice	1Tx	2Tx	3Tx	4Tx	1Tx	2Tx	3Tx	4Tx
GSM 850	128	33.62	33.63	29.56	27.75	26.73	26.30	25.46	23.39	22.06
	190	33.60	33.61	29.66	27.89	26.86	26.64	25.78	23.52	22.43
	251	33.49	33.50	29.63	28.58	27.13	26.57	25.98	23.77	22.42
GSM 1900	512	30.42	30.43	28.05	25.85	24.21	26.23	24.27	22.91	21.51
	661	30.67	30.68	28.66	26.83	24.92	26.75	24.78	23.36	22.02
	810	30.21	30.22	28.27	26.31	24.53	26.44	24.43	23.05	21.65

Maximum Frame-Average Output Power (dB m)										
Band	Channel	GSM	GPRS (GMSK)				EGPRS (8-PSK)			
		Voice	1Tx	2Tx	3Tx	4Tx	1Tx	2Tx	3Tx	4Tx
GSM 850	128	24.59	24.60	23.54	23.49	23.72	17.27	19.44	19.13	19.05
	190	24.57	24.58	23.64	23.63	23.85	17.61	19.76	19.26	19.42
	251	24.46	24.47	23.61	24.32	24.12	17.54	19.96	19.51	19.41
GSM 1900	512	21.39	21.40	22.03	21.59	21.20	17.20	18.25	18.65	18.50
	661	21.64	21.65	22.64	22.57	21.91	17.72	18.76	19.10	19.01
	810	21.18	21.19	22.25	22.05	21.52	17.41	18.41	18.79	18.64
GSM 850	Frame Avg, Target	25.47	25.47	24.98	24.74	24.99	18.47	20.48	20.24	20.49
GSM 1900		22.47	22.47	23.48	23.24	22.49	18.47	19.48	19.74	19.99

9.2 GSM Average Conducted Output Power (Reduced Average Power-Grip Sensor)

Maximum Burst-Average Output Power (dB m)										
Band	Channel	GSM	GPRS (GMSK)				EGPRS (8-PSK)			
		Voice	1Tx	2Tx	3Tx	4Tx	1Tx	2Tx	3Tx	4Tx
GSM 850	128	23.97	23.98	20.46	18.59	17.30	15.81	14.52	12.56	11.64
	190	24.21	24.22	20.71	18.83	17.54	15.95	14.87	12.61	11.77
	251	24.26	24.27	20.75	18.97	17.90	16.13	14.83	12.60	11.99
GSM 1900	512	20.65	21.33	18.98	17.07	15.24	16.21	14.28	12.91	11.56
	661	21.21	21.49	19.31	17.49	15.49	17.07	15.08	13.72	12.36
	810	20.82	21.45	19.04	17.27	15.36	16.92	15.01	13.62	12.28

Maximum Frame-Average Output Power (dB m)										
Band	Channel	GSM	GPRS (GMSK)				EGPRS (8-PSK)			
		Voice	1Tx	2Tx	3Tx	4Tx	1Tx	2Tx	3Tx	4Tx
GSM 850	128	14.94	14.95	14.44	14.33	14.29	6.78	8.50	8.30	8.63
	190	15.18	15.19	14.69	14.57	14.53	6.92	8.85	8.35	8.76
	251	15.23	15.24	14.73	14.71	14.89	7.10	8.81	8.34	8.98
GSM 1900	512	11.62	12.30	12.96	12.81	12.23	7.18	8.26	8.65	8.55
	661	12.18	12.46	13.29	13.23	12.48	8.04	9.06	9.46	9.35
	810	11.79	12.42	13.02	13.01	12.35	7.89	8.99	9.36	9.27
GSM 850	Frame Avg, Target	15.47	15.47	14.98	14.74	14.99	8.47	10.48	10.24	10.49
GSM 1900		12.47	12.47	13.48	13.24	12.49	8.47	9.48	9.74	9.99

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (43) of (338)



9.3 GSM Average Conducted Output Power (Reduced Average Power-RCV+Proximity Sensor)

Maximum Burst-Average Output Power (dB m)										
Band	Channel	GSM	GPRS (GMSK)				EGPRS (8-PSK)			
		Voice	1Tx	2Tx	3Tx	4Tx	1Tx	2Tx	3Tx	4Tx
GSM 850	128	23.81	23.83	20.33	18.74	17.47	15.71	14.64	12.52	11.58
	190	24.06	24.08	20.57	19.00	17.73	16.06	14.78	12.54	11.94
	251	24.48	24.49	20.91	18.99	17.79	16.16	15.00	12.74	11.91
GSM 1900	512	23.14	23.17	21.03	18.99	17.27	19.35	17.24	15.51	14.15
	661	23.93	23.96	21.75	19.87	17.97	19.85	17.74	16.34	14.98
	810	23.52	23.55	21.38	19.45	17.86	19.47	17.33	16.24	14.89

Maximum Frame-Average Output Power (dB m)										
Band	Channel	GSM	GPRS (GMSK)				EGPRS (8-PSK)			
		Voice	1Tx	2Tx	3Tx	4Tx	1Tx	2Tx	3Tx	4Tx
GSM 850	128	14.78	14.80	14.31	14.48	14.46	6.68	8.62	8.26	8.57
	190	15.03	15.05	14.55	14.74	14.72	7.03	8.76	8.28	8.93
	251	15.45	15.46	14.89	14.73	14.78	7.13	8.98	8.48	8.90
GSM 1900	512	14.11	14.14	15.01	14.73	14.26	10.32	11.22	11.25	11.14
	661	14.90	14.93	15.73	15.61	14.96	10.82	11.72	12.08	11.97
	810	14.49	14.52	15.36	15.19	14.85	10.44	11.31	11.98	11.88
GSM 850	Frame Avg, Target	15.47	15.47	14.98	14.74	14.99	8.47	10.48	10.24	10.49
GSM 1900		14.97	14.97	15.98	15.74	14.99	10.97	11.98	12.24	12.49

9.4 WCDMA Average Conducted Output Power (Maximum Average Power)

Band	Mode	Average Conducted Power (dB m)			3GPP MPR [dB]
		Channel			
		9 262	9 400	9 538	
WCDMA Band II	RMC	23.69	23.84	23.95	-
	HSDPA-Subtest 1	23.04	23.23	23.35	0
	HSDPA-Subtest 2	22.88	23.18	22.99	0
	HSDPA-Subtest 3	21.72	22.10	21.95	0.5
	HSDPA-Subtest 4	22.22	22.36	22.40	0.5
	HSUPA-Subtest 1	22.60	22.78	22.84	0
	HSUPA-Subtest 2	21.16	21.28	21.34	2
	HSUPA-Subtest 3	22.12	22.38	22.45	1
	HSUPA-Subtest 4	21.19	21.33	21.37	2
	HSUPA-Subtest 5	23.67	23.82	23.89	0
	DC-HSDPA-Subtest 1	23.35	23.41	23.50	0
	DC-HSDPA-Subtest 2	23.33	23.52	23.47	0
	DC-HSDPA-Subtest 3	21.82	21.95	21.94	0.5
	DC-HSDPA-Subtest 4	22.84	23.00	22.92	0.5

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (44) of (338)



Band	Mode	Average Conducted Power (dB m)			3GPP MPR [dB]
		Channel			
		1 312	1 412	1 513	
WCDMA Band IV	RMC	24.18	24.00	24.05	-
	HSDPA-Subtest 1	23.53	23.45	23.45	0
	HSDPA-Subtest 2	23.33	23.31	23.14	0
	HSDPA-Subtest 3	22.26	22.01	22.06	0.5
	HSDPA-Subtest 4	22.76	22.57	22.79	0.5
	HSUPA-Subtest 1	23.14	23.03	23.05	0
	HSUPA-Subtest 2	21.69	21.55	21.58	2
	HSUPA-Subtest 3	22.61	22.47	22.55	1
	HSUPA-Subtest 4	21.63	21.58	21.65	2
	HSUPA-Subtest 5	22.61	22.39	22.54	0
	DC-HSDPA-Subtest 1	23.56	23.59	23.74	0
	DC-HSDPA-Subtest 2	23.59	23.60	23.76	0
	DC-HSDPA-Subtest 3	22.11	22.10	22.23	0.5
	DC-HSDPA-Subtest 4	23.15	23.15	23.25	0.5

Band	Mode	Average Conducted Power (dB m)			3GPP MPR [dB]
		Channel			
		4 132	4 183	4 233	
WCDMA Band V	RMC	23.64	23.80	23.69	-
	HSDPA-Subtest 1	23.08	23.29	23.14	0
	HSDPA-Subtest 2	22.75	22.99	22.86	0
	HSDPA-Subtest 3	21.67	22.07	21.71	0.5
	HSDPA-Subtest 4	22.30	22.31	22.23	0.5
	HSUPA-Subtest 1	22.72	22.57	22.57	0
	HSUPA-Subtest 2	21.12	21.26	21.16	2
	HSUPA-Subtest 3	22.14	22.29	22.20	1
	HSUPA-Subtest 4	21.12	21.25	21.16	2
	HSUPA-Subtest 5	22.13	22.26	22.14	0
	DC-HSDPA-Subtest 1	23.10	23.31	23.16	0
	DC-HSDPA-Subtest 2	23.19	23.34	23.16	0
	DC-HSDPA-Subtest 3	21.68	21.78	21.61	0.5
	DC-HSDPA-Subtest 4	22.64	22.78	22.62	0.5

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (45) of (338)



9.5 WCDMA Average Conducted Output Power (Reduced Average Power-Grip Sensor)

Band	Mode	Average Conducted Power (dB m)			3GPP MPR [dB]
		Channel			
		9 262	9 400	9 538	
WCDMA Band II	RMC	13.84	14.00	13.98	-
	HSDPA-Subtest 1	13.69	13.82	13.96	0
	HSDPA-Subtest 2	13.36	13.50	13.72	0
	HSDPA-Subtest 3	13.50	13.62	13.68	0
	HSDPA-Subtest 4	13.22	13.64	13.45	0
	HSUPA-Subtest 1	13.01	13.11	13.07	0
	HSUPA-Subtest 2	12.70	12.85	12.88	0
	HSUPA-Subtest 3	12.73	12.83	12.91	0
	HSUPA-Subtest 4	12.70	12.83	12.90	0
	HSUPA-Subtest 5	13.73	13.86	13.92	0
	DC-HSDPA-Subtest 1	13.70	13.99	13.97	0
	DC-HSDPA-Subtest 2	13.82	13.94	13.93	0
	DC-HSDPA-Subtest 3	13.81	13.98	13.92	0
DC-HSDPA-Subtest 4	13.80	13.93	13.89	0	

Band	Mode	Average Conducted Power (dB m)			3GPP MPR [dB]
		Channel			
		1 312	1 412	1 513	
WCDMA Band IV	RMC	15.19	15.06	15.19	-
	HSDPA-Subtest 1	14.91	14.95	14.94	0
	HSDPA-Subtest 2	14.94	14.78	14.64	0
	HSDPA-Subtest 3	14.71	14.54	14.55	0
	HSDPA-Subtest 4	14.74	14.53	14.76	0
	HSUPA-Subtest 1	14.19	14.00	14.01	0
	HSUPA-Subtest 2	13.99	13.94	13.99	0
	HSUPA-Subtest 3	14.11	14.05	14.01	0
	HSUPA-Subtest 4	13.98	13.96	13.99	0
	HSUPA-Subtest 5	14.98	14.96	14.98	0
	DC-HSDPA-Subtest 1	14.74	14.83	14.94	0
	DC-HSDPA-Subtest 2	14.83	14.83	14.97	0
	DC-HSDPA-Subtest 3	14.84	14.84	14.93	0
DC-HSDPA-Subtest 4	14.83	14.85	14.93	0	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (46) of (338)



Band	Mode	Average Conducted Power (dB m)			3GPP MPR [dB]
		Channel			
		4 132	4 183	4 233	
WCDMA Band V	RMC	19.66	19.80	19.69	-
	HSDPA-Subtest 1	19.52	19.77	19.59	0
	HSDPA-Subtest 2	19.22	19.64	19.32	0
	HSDPA-Subtest 3	19.13	19.63	19.26	0
	HSDPA-Subtest 4	19.09	19.57	19.49	0
	HSUPA-Subtest 1	18.54	18.22	18.12	0
	HSUPA-Subtest 2	18.57	18.76	18.63	0
	HSUPA-Subtest 3	18.57	18.76	18.67	0
	HSUPA-Subtest 4	18.55	18.78	18.68	0
	HSUPA-Subtest 5	19.54	19.77	19.63	0
	DC-HSDPA-Subtest 1	19.12	19.74	19.57	0
	DC-HSDPA-Subtest 2	19.62	19.75	19.60	0
	DC-HSDPA-Subtest 3	19.64	19.78	19.57	0
	DC-HSDPA-Subtest 4	19.63	19.76	19.61	0



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (47) of (338)



9.6 WCDMA Average Conducted Output Power (Reduced Average Power-RCV+Proximity Sensor)

Band	Mode	Average Conducted Power (dB m)			3GPP MPR [dB]
		Channel			
		9 262	9 400	9 538	
WCDMA Band II	RMC	13.64	13.76	13.75	-
	HSDPA-Subtest 1	13.45	13.63	13.69	0
	HSDPA-Subtest 2	13.28	13.26	13.54	0
	HSDPA-Subtest 3	13.05	13.20	13.49	0
	HSDPA-Subtest 4	12.99	13.39	13.22	0
	HSUPA-Subtest 1	12.52	12.15	12.22	0
	HSUPA-Subtest 2	12.54	12.66	12.69	0
	HSUPA-Subtest 3	12.53	12.66	12.71	0
	HSUPA-Subtest 4	12.54	12.66	12.69	0
	HSUPA-Subtest 5	13.55	13.70	13.74	0
	DC-HSDPA-Subtest 1	13.50	13.71	13.72	0
	DC-HSDPA-Subtest 2	13.62	13.69	13.71	0
	DC-HSDPA-Subtest 3	13.61	13.75	13.71	0
DC-HSDPA-Subtest 4	13.63	13.74	13.72	0	

Band	Mode	Average Conducted Power (dB m)			3GPP MPR [dB]
		Channel			
		1 312	1 412	1 513	
WCDMA Band IV	RMC	14.99	14.88	14.96	-
	HSDPA-Subtest 1	14.92	14.76	14.76	0
	HSDPA-Subtest 2	14.62	14.44	14.44	0
	HSDPA-Subtest 3	14.50	14.55	14.35	0
	HSDPA-Subtest 4	14.50	14.34	14.35	0
	HSUPA-Subtest 1	14.95	14.79	14.80	0
	HSUPA-Subtest 2	14.98	14.80	14.82	0
	HSUPA-Subtest 3	14.98	14.80	14.82	0
	HSUPA-Subtest 4	14.97	14.79	14.82	0
	HSUPA-Subtest 5	14.98	14.79	14.82	0
	DC-HSDPA-Subtest 1	14.85	14.84	14.95	0
	DC-HSDPA-Subtest 2	14.86	14.85	14.91	0
	DC-HSDPA-Subtest 3	14.82	14.86	14.94	0
DC-HSDPA-Subtest 4	14.85	14.86	14.92	0	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (48) of (338)



Band	Mode	Average Conducted Power (dB m)			3GPP MPR [dB]
		Channel			
		4 132	4 183	4 233	
WCDMA Band V	RMC	18.46	18.64	18.53	-
	HSDPA-Subtest 1	18.09	18.37	18.17	0
	HSDPA-Subtest 2	17.99	18.23	17.93	0
	HSDPA-Subtest 3	17.83	18.03	18.11	0
	HSDPA-Subtest 4	17.81	18.07	17.90	0
	HSUPA-Subtest 1	17.26	17.45	18.32	0
	HSUPA-Subtest 2	17.29	17.45	17.34	0
	HSUPA-Subtest 3	17.32	17.47	17.39	0
	HSUPA-Subtest 4	17.32	17.49	17.40	0
	HSUPA-Subtest 5	18.26	18.47	18.36	0
	DC-HSDPA-Subtest 1	17.78	18.48	18.28	0
	DC-HSDPA-Subtest 2	18.35	18.46	18.28	0
	DC-HSDPA-Subtest 3	18.34	18.46	18.26	0
	DC-HSDPA-Subtest 4	18.36	18.47	18.28	0



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (49) of (338)



9.7 LTE Average Conducted Output Power (Maximum Average Power)

9.7.1 LTE Band 2

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 700	18 900	19 100	
				1 860.0 MHz	1 880.0 MHz	1 900.0 MHz	
20 MHz	QPSK	1	0	23.12	23.66	23.36	0
		1	49	23.70	23.25	23.82	0
		1	99	23.20	23.26	23.44	0
		50	0	22.70	22.74	22.88	1
		50	24	22.73	22.79	22.95	1
		50	50	22.69	22.74	22.93	1
		100	0	22.79	22.84	22.92	1
	16QAM	1	0	22.78	23.08	23.10	1
		1	49	22.85	23.09	23.17	1
		1	99	22.80	23.07	23.13	1
		50	0	21.69	21.76	21.95	2
		50	24	21.79	21.83	21.95	2
		50	50	21.73	21.73	21.93	2
		100	0	21.81	21.87	22.00	2
	64QAM	1	0	21.57	21.73	21.99	2
		1	49	21.80	21.81	22.11	2
		1	99	21.86	21.82	21.83	2
		50	0	20.63	20.62	20.84	3
		50	24	20.70	20.66	20.87	3
		50	50	20.62	20.65	20.86	3
		100	0	20.67	20.71	20.97	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 675	18 900	19 125	
				1 857.5 MHz	1 880.0 MHz	1 902.5 MHz	
15 MHz	QPSK	1	0	23.01	23.74	23.31	0
		1	36	23.06	23.27	23.32	0
		1	74	23.05	23.23	23.75	0
		36	0	22.69	22.79	22.86	1
		36	18	22.70	22.81	22.90	1
		36	37	22.67	22.77	22.83	1
		75	0	22.74	22.85	22.91	1
	16QAM	1	0	22.77	22.76	22.91	1
		1	36	22.84	22.85	23.00	1
		1	74	22.75	22.77	22.93	1
		36	0	21.72	21.82	21.84	2
		36	18	21.73	21.84	21.87	2
		36	37	21.64	21.76	21.83	2
		75	0	21.76	21.85	21.84	2
	64QAM	1	0	21.72	21.82	21.89	2
		1	36	21.85	21.89	22.03	2
		1	74	21.71	21.74	21.89	2
		36	0	20.60	20.72	20.83	3
		36	18	20.65	20.71	20.83	3
		36	37	20.64	20.61	20.78	3
		75	0	20.67	20.71	20.87	3

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (50) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 650	18 900	19 150	
				1 855.0 MHz	1 880.0 MHz	1 905.0 MHz	
10 MHz	QPSK	1	0	23.13	23.20	23.42	0
		1	25	23.14	23.26	23.43	0
		1	49	23.11	23.20	23.20	0
		25	0	22.65	22.74	22.76	1
		25	12	22.70	22.78	22.74	1
		25	25	22.64	22.74	22.74	1
		50	0	22.70	22.79	22.80	1
	16QAM	1	0	22.89	23.07	22.76	1
		1	25	22.76	22.82	22.75	1
		1	49	22.84	23.09	22.65	1
		25	0	21.65	21.84	21.75	2
		25	12	21.74	21.87	21.77	2
		25	25	21.72	21.79	21.72	2
		50	0	21.78	21.84	21.82	2
	64QAM	1	0	21.59	21.66	21.86	2
		1	25	21.71	21.71	21.92	2
		1	49	21.67	21.68	21.67	2
		25	0	20.55	20.64	20.70	3
		25	12	20.65	20.69	20.79	3
		25	25	20.57	20.67	20.73	3
		50	0	20.64	20.65	20.79	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 625	18 900	19 175	
				1 852.5 MHz	1 880.0 MHz	1 907.5 MHz	
5 MHz	QPSK	1	0	22.88	23.18	23.16	0
		1	12	22.91	23.29	23.30	0
		1	24	23.08	23.30	23.32	0
		12	0	22.59	22.77	22.80	1
		12	7	22.57	22.78	22.76	1
		12	13	22.58	22.75	22.74	1
		25	0	22.60	22.77	22.76	1
	16QAM	1	0	22.40	22.96	22.94	1
		1	12	22.43	23.00	22.62	1
		1	24	22.63	23.03	22.68	1
		12	0	21.65	21.83	21.78	2
		12	7	21.57	21.79	21.78	2
		12	13	21.56	21.77	21.76	2
		25	0	21.64	21.75	21.77	2
	64QAM	1	0	21.52	21.78	21.84	2
		1	12	21.61	21.93	21.86	2
		1	24	21.69	21.67	21.75	2
		12	0	20.52	20.58	20.75	3
		12	7	20.44	20.64	20.71	3
		12	13	20.46	20.66	20.73	3
		25	0	20.54	20.57	20.67	3

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (51) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 615	18 900	19 185	
				1 851.5 MHz	1 880.0 MHz	1 908.5 MHz	
3 MHz	QPSK	1	0	23.11	23.37	23.25	0
		1	8	22.94	23.27	23.33	0
		1	14	22.97	23.30	23.29	0
		8	0	22.54	22.70	22.72	1
		8	4	22.54	22.68	22.72	1
		8	7	22.53	22.73	22.72	1
		15	0	22.53	22.71	22.72	1
	16QAM	1	0	22.57	22.92	22.83	1
		1	8	22.46	23.00	22.73	1
		1	14	22.88	22.61	22.90	1
		8	0	21.57	21.71	21.78	2
		8	4	21.61	21.76	21.78	2
		8	7	21.59	21.65	21.72	2
		15	0	21.56	21.79	21.75	2
	64QAM	1	0	21.64	21.85	21.86	2
		1	8	21.56	21.76	21.79	2
		1	14	21.49	21.71	21.69	2
		8	0	20.43	20.64	20.65	3
		8	4	20.50	20.72	20.72	3
		8	7	20.40	20.68	20.70	3
		15	0	20.44	20.68	20.67	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 607	18 900	19 193	
				1 850.7 MHz	1 880.0 MHz	1 909.3 MHz	
1.4 MHz	QPSK	1	0	23.14	23.49	23.34	0
		1	3	22.94	23.21	23.07	0
		1	5	23.11	23.33	23.13	0
		3	0	23.47	23.61	23.56	0
		3	1	23.45	23.67	23.57	0
		3	3	23.47	23.68	23.47	0
		6	0	22.48	22.71	22.55	1
	16QAM	1	0	22.67	23.19	22.66	1
		1	3	22.43	23.19	22.54	1
		1	5	22.57	23.08	22.57	1
		3	0	22.36	22.54	22.67	1
		3	1	22.40	22.65	22.69	1
		3	3	22.60	22.60	22.62	1
		6	0	21.57	21.74	21.57	2
	64QAM	1	0	21.52	21.81	21.67	2
		1	3	21.43	21.63	21.71	2
		1	5	21.55	21.81	21.67	2
		3	0	21.51	21.71	21.67	2
		3	1	21.52	21.69	21.54	2
		3	3	21.44	21.68	21.57	2
		6	0	20.48	20.70	20.55	3

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (52) of (338)

**9.7.2 LTE Band 5**

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				20 525		
				836.5 MHz		
10 MHz	QPSK	1	0	23.09	0	
		1	25	23.53	0	
		1	49	23.13	0	
		25	0	22.59	1	
		25	12	22.64	1	
		25	25	22.60	1	
		50	0	22.53	1	
	16QAM	1	0	22.79	1	
		1	25	22.87	1	
		1	49	22.79	1	
		25	0	21.67	2	
		25	12	21.80	2	
		25	25	21.74	2	
		50	0	21.78	2	
	64QAM	1	0	21.65	2	
		1	49	21.54	2	
		1	99	21.54	2	
		50	0	20.54	3	
		50	24	20.49	3	
		50	50	20.41	3	
		100	0	20.50	3	

10 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 425	20 525	20 625	
				826.5 MHz	836.5 MHz	846.5 MHz	
5 MHz	QPSK	1	0	22.98	23.12	23.07	0
		1	12	23.03	23.19	23.10	0
		1	24	23.10	23.21	23.12	0
		12	0	22.54	22.68	22.59	1
		12	7	22.51	22.65	22.57	1
		12	13	22.46	22.66	22.57	1
		25	0	22.55	22.70	22.61	1
	16QAM	1	0	22.44	22.57	22.63	1
		1	12	22.62	22.63	22.77	1
		1	24	22.54	22.87	22.68	1
		12	0	21.62	21.81	21.72	2
		12	7	21.62	21.76	21.64	2
		12	13	21.58	21.73	21.66	2
		25	0	21.62	21.71	21.64	2
	64QAM	1	0	21.42	21.31	21.38	2
		1	12	21.41	21.59	21.53	2
		1	24	21.44	21.32	21.33	2
		12	0	20.36	20.65	20.43	3
		12	7	20.33	20.50	20.43	3
		12	13	20.18	20.50	20.42	3
		25	0	20.34	20.55	20.40	3

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (53) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 415	20 525	20 635	
				825.5 MHz	836.5 MHz	847.5 MHz	
3 MHz	QPSK	1	0	23.10	23.24	23.23	0
		1	8	22.91	23.22	23.11	0
		1	14	22.97	23.28	23.13	0
		8	0	22.52	22.65	22.58	1
		8	4	22.49	22.65	22.62	1
		8	7	22.48	22.65	22.65	1
		15	0	22.57	22.71	22.62	1
	16QAM	1	0	22.69	22.78	22.42	1
		1	8	22.38	23.07	22.29	1
		1	14	22.79	22.81	22.90	1
		8	0	21.63	21.65	21.65	2
		8	4	21.58	21.67	21.62	2
		8	7	21.64	21.59	21.59	2
		15	0	21.56	21.74	21.63	2
	64QAM	1	0	21.61	21.61	21.39	2
		1	8	21.20	21.70	21.35	2
		1	14	21.27	21.46	21.33	2
		8	0	20.40	20.43	20.38	3
		8	4	20.26	20.43	20.39	3
		8	7	20.38	20.39	20.37	3
		15	0	20.26	20.37	20.30	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 407	20 525	20 643	
				824.7 MHz	836.5 MHz	848.3 MHz	
1.4 MHz	QPSK	1	0	23.36	23.47	23.40	0
		1	3	23.06	23.12	23.64	0
		1	5	23.30	23.32	23.29	0
		3	0	23.28	23.30	23.30	0
		3	1	23.27	23.35	23.26	0
		3	3	23.22	23.40	23.28	0
		6	0	22.26	22.37	22.27	1
	16QAM	1	0	22.33	22.62	22.45	1
		1	3	22.01	22.55	22.41	1
		1	5	22.27	22.46	22.30	1
		3	0	22.26	22.44	22.41	1
		3	1	22.32	22.28	22.16	1
		3	3	22.08	22.26	22.36	1
		6	0	21.57	21.71	21.68	2
	64QAM	1	0	21.25	21.45	21.07	2
		1	3	21.37	21.58	21.29	2
		1	5	21.43	21.51	21.51	2
		3	0	21.42	21.59	21.42	2
		3	1	21.36	21.37	21.46	2
		3	3	21.33	21.33	21.49	2
		6	0	20.36	20.62	20.43	3

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (54) of (338)

**9.7.3 LTE Band 12**

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				23 095		
				707.5 MHz		
10 MHz	QPSK	1	0	23.14	0	
		1	25	23.45	0	
		1	49	23.22	0	
		25	0	22.65	1	
		25	12	22.78	1	
		25	25	22.73	1	
		50	0	22.76	1	
	16QAM	1	0	22.89	1	
		1	25	22.89	1	
		1	49	23.01	1	
		25	0	21.65	2	
		25	12	21.74	2	
		25	25	21.69	2	
		50	0	21.79	2	
	64QAM	1	0	21.46	2	
		1	25	21.75	2	
		1	49	21.76	2	
		25	0	20.71	3	
		25	12	20.77	3	
		25	25	20.75	3	
		50	0	20.72	3	

10 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 035	23 095	23 155	
				701.5 MHz	707.5 MHz	713.5 MHz	
5 MHz	QPSK	1	0	23.21	23.24	23.20	0
		1	12	23.29	23.22	23.29	0
		1	24	23.21	23.20	23.30	0
		12	0	22.70	22.73	22.81	1
		12	7	22.69	22.71	22.76	1
		12	13	22.68	22.69	22.75	1
		25	0	22.66	22.76	22.81	1
	16QAM	1	0	22.57	22.74	23.02	1
		1	12	22.94	22.81	22.82	1
		1	24	22.67	22.86	22.79	1
		12	0	21.75	21.71	21.86	2
		12	7	21.69	21.74	21.81	2
		12	13	21.69	21.70	21.78	2
		25	0	21.71	21.75	21.83	2
	64QAM	1	0	21.74	21.78	21.81	2
		1	12	21.72	21.59	21.65	2
		1	24	21.65	21.74	21.84	2
		12	0	20.82	20.77	20.91	3
		12	7	20.71	20.78	20.84	3
		12	13	20.67	20.68	20.79	3
		25	0	20.76	20.76	20.82	3

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (55) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 025	23 095	23 655	
				700.5 MHz	707.5 MHz	714.5 MHz	
3 MHz	QPSK	1	0	23.26	23.25	23.34	0
		1	8	23.24	23.28	23.38	0
		1	14	23.16	23.27	23.35	0
		8	0	22.67	22.72	22.75	1
		8	4	22.65	22.70	22.79	1
		8	7	22.64	22.69	22.72	1
		15	0	22.64	22.74	22.79	1
	16QAM	1	0	22.74	22.91	22.72	1
		1	8	22.83	22.90	22.76	1
		1	14	22.65	22.85	22.57	1
		8	0	21.76	21.59	21.75	2
		8	4	21.73	21.57	21.87	2
		8	7	21.73	21.72	21.79	2
		15	0	21.71	21.73	21.83	2
	64QAM	1	0	21.77	21.92	21.78	2
		1	8	21.58	21.46	21.70	2
		1	14	21.67	21.46	21.73	2
		8	0	20.67	20.82	20.71	3
		8	4	20.70	20.86	20.73	3
		8	7	20.65	20.73	20.67	3
		15	0	20.70	20.72	20.75	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 017	23 095	23 173	
				699.7 MHz	707.5 MHz	715.3 MHz	
1.4 MHz	QPSK	1	0	23.38	23.31	23.48	0
		1	3	23.20	23.20	23.26	0
		1	5	23.24	23.26	23.47	0
		3	0	23.29	23.41	23.46	0
		3	1	23.31	23.40	23.45	0
		3	3	23.32	23.45	23.39	0
		6	0	22.32	22.37	22.45	1
	16QAM	1	0	22.52	22.63	22.51	1
		1	3	22.41	22.49	22.15	1
		1	5	22.47	22.61	22.43	1
		3	0	22.37	22.65	22.51	1
		3	1	22.51	22.31	22.54	1
		3	3	22.41	22.38	22.50	1
		6	0	21.70	21.77	21.72	2
	64QAM	1	0	21.78	21.72	21.87	2
		1	3	21.54	21.83	21.82	2
		1	5	21.80	21.78	21.97	2
		3	0	21.79	21.75	21.82	2
		3	1	21.80	21.71	21.84	2
		3	3	21.64	21.73	21.88	2
		6	0	20.61	20.79	20.79	3

9.7.4 LTE Band 13

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				23 230		
				782.0 MHz		
10 MHz	QPSK	1	0	22.96	0	
		1	25	23.35	0	
		1	49	22.96	0	
		25	0	22.49	1	
		25	12	22.65	1	
		25	25	22.52	1	
		50	0	22.63	1	
	16QAM	1	0	23.05	1	
		1	25	22.71	1	
		1	49	22.62	1	
		25	0	21.55	2	
		25	12	21.56	2	
		25	25	21.53	2	
		50	0	21.65	2	
	64QAM	1	0	21.60	2	
		1	25	21.70	2	
		1	49	21.58	2	
		25	0	20.50	3	
		25	12	20.54	3	
		25	25	20.45	3	
		50	0	20.59	3	

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				23 230		
				782.0 MHz		
5 MHz	QPSK	1	0	23.12	0	
		1	12	23.10	0	
		1	24	23.16	0	
		12	0	22.56	1	
		12	7	22.56	1	
		12	13	22.53	1	
		25	0	22.60	1	
	16QAM	1	0	22.66	1	
		1	12	22.77	1	
		1	24	22.75	1	
		12	0	21.57	2	
		12	7	21.54	2	
		12	13	21.50	2	
		25	0	21.57	2	
	64QAM	1	0	21.65	2	
		1	12	21.68	2	
		1	24	21.69	2	
		12	0	20.57	3	
		12	7	20.62	3	
		12	13	20.50	3	
		25	0	20.53	3	

5 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (57) of (338)

**9.7.5 LTE Band 41**

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
20 MHz	QPSK	1	0	23.49	23.17	23.09	23.21	24.01	0
		1	49	24.03	23.27	23.46	23.72	23.59	0
		1	99	23.54	23.26	23.02	23.71	23.51	0
		50	0	23.01	22.75	22.46	22.73	23.09	1
		50	24	23.17	22.82	22.58	22.80	23.16	1
		50	50	23.04	22.76	22.52	22.74	23.12	1
	16QAM	100	0	23.12	22.80	22.59	22.79	23.10	1
		1	0	23.00	22.59	22.28	22.64	23.14	1
		1	49	23.16	22.74	22.40	22.70	23.19	1
		1	99	23.05	22.81	22.40	22.80	23.20	1
		50	0	22.05	21.68	21.53	21.72	22.06	2
		50	24	22.12	21.75	21.65	21.77	22.11	2
	64QAM	50	50	22.06	21.71	21.60	21.76	22.11	2
		100	0	22.13	21.80	21.62	21.85	22.19	2
		1	0	21.81	21.40	21.20	21.34	21.69	2
		1	49	21.89	21.52	21.39	21.40	21.76	2
		1	99	21.93	21.57	21.38	21.35	21.72	2
		50	0	20.97	20.63	20.42	20.62	20.89	3
	50	24	21.02	20.71	20.54	20.66	20.90	3	
	50	50	20.98	20.72	20.47	20.58	20.87	3	
	100	0	21.06	20.77	20.56	20.71	21.00	3	

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
15 MHz	QPSK	1	0	23.41	23.10	23.44	23.65	24.00	0
		1	36	24.00	23.18	23.03	23.25	23.61	0
		1	74	23.47	23.17	23.44	23.21	23.55	0
		36	0	23.08	22.80	22.55	22.79	23.14	1
		36	18	23.08	22.79	22.52	22.82	23.21	1
		36	37	23.11	22.74	22.51	22.74	23.15	1
	16QAM	75	0	23.14	22.85	22.58	22.86	23.22	1
		1	0	23.08	22.72	22.38	22.60	23.27	1
		1	36	23.18	22.87	22.42	22.70	23.31	1
		1	74	23.12	22.76	22.40	22.66	23.21	1
		36	0	22.11	21.72	21.52	21.75	22.16	2
		36	18	22.07	21.75	21.47	21.77	22.20	2
	64QAM	36	37	22.06	21.72	21.47	21.72	22.15	2
		75	0	22.11	21.79	21.57	21.83	22.20	2
		1	0	21.95	21.54	21.34	21.48	21.83	2
		1	36	21.88	21.51	21.38	21.39	21.75	2
		1	74	22.01	21.65	21.46	21.43	21.80	2
		36	0	20.89	20.55	20.34	20.54	20.81	3
	36	18	20.99	20.68	20.51	20.63	20.87	3	
	36	37	21.08	20.82	20.57	20.68	20.97	3	
	75	0	20.98	20.69	20.48	20.63	20.92	3	

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (58) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
10 MHz	QPSK	1	0	23.58	23.23	23.09	23.28	23.59	0
		1	25	23.64	23.36	23.10	23.34	23.72	0
		1	49	23.59	23.25	23.08	23.36	23.67	0
		25	0	23.01	22.72	22.49	22.77	23.07	1
		25	12	23.07	22.82	22.51	22.74	23.12	1
		25	25	23.02	22.79	22.47	22.78	23.16	1
		50	0	23.10	22.83	22.55	22.80	23.17	1
	16QAM	1	0	23.07	22.59	22.23	22.69	22.92	1
		1	25	23.08	22.59	22.31	22.76	23.03	1
		1	49	23.05	22.57	22.27	22.70	22.97	1
		25	0	22.04	21.69	21.50	21.67	22.05	2
		25	12	22.08	21.73	21.50	21.75	22.12	2
		25	25	22.03	21.74	21.53	21.73	22.09	2
		50	0	22.09	21.77	21.59	21.83	22.14	2
	64QAM	1	0	21.96	21.55	21.35	21.49	21.84	2
		1	25	21.79	21.42	21.29	21.30	21.66	2
		1	49	22.03	21.67	21.48	21.45	21.82	2
		25	0	21.09	20.75	20.54	20.74	21.01	3
		25	12	21.02	20.71	20.54	20.66	20.90	3
		25	25	21.11	20.85	20.60	20.71	21.00	3
		50	0	21.12	20.83	20.62	20.77	21.06	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
5 MHz	QPSK	1	0	23.64	23.28	23.02	23.32	23.66	0
		1	12	23.71	23.34	23.09	23.29	23.57	0
		1	24	23.63	23.32	23.02	23.29	23.66	0
		12	0	23.10	22.79	22.51	22.78	23.17	1
		12	7	23.09	22.76	22.49	22.78	23.15	1
		12	13	23.11	22.75	22.49	22.75	23.13	1
		25	0	23.08	22.76	22.51	22.77	23.17	1
	16QAM	1	0	22.89	22.57	22.54	22.61	23.00	1
		1	12	23.02	22.68	22.57	22.49	22.90	1
		1	24	22.92	22.62	22.53	22.64	23.08	1
		12	0	22.14	21.79	21.58	21.78	22.15	2
		12	7	22.11	21.73	21.50	21.74	22.15	2
		12	13	22.10	21.74	21.52	21.75	22.14	2
		25	0	22.15	21.79	21.50	21.79	22.15	2
	64QAM	1	0	21.91	21.50	21.30	21.44	21.79	2
		1	12	21.74	21.37	21.24	21.25	21.61	2
		1	24	21.94	21.58	21.39	21.36	21.73	2
		12	0	20.98	20.64	20.43	20.63	20.90	3
		12	7	21.11	20.80	20.63	20.75	20.99	3
		12	13	20.88	20.62	20.37	20.48	20.77	3
		25	0	21.09	20.80	20.59	20.74	21.03	3

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (59) of (338)

**9.7.6 LTE Band 66**

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 072	132 322	132 572	
				1 720.0 MHz	1 745.0 MHz	1 770.0 MHz	
20 MHz	QPSK	1	0	24.05	23.96	23.82	0
		1	49	24.12	24.08	23.84	0
		1	99	24.14	24.10	23.94	0
		50	0	23.16	23.08	22.88	1
		50	24	23.26	23.19	22.97	1
		50	50	23.21	23.18	22.94	1
		100	0	23.25	23.20	22.98	1
	16QAM	1	0	23.50	23.42	23.36	1
		1	49	23.56	23.49	23.42	1
		1	99	23.44	23.55	23.44	1
		50	0	22.49	22.34	22.13	2
		50	24	22.55	22.46	22.18	2
		50	50	22.42	22.39	22.13	2
		100	0	22.55	22.49	22.23	2
	64QAM	1	0	22.55	22.39	22.27	2
		1	49	22.55	22.55	22.33	2
		1	99	22.50	22.63	22.34	2
		50	0	21.38	21.29	21.14	3
		50	24	21.45	21.46	21.23	3
		50	50	21.45	21.37	21.17	3
		100	0	21.42	21.41	21.17	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 047	132 322	132 597	
				1 717.5 MHz	1 745.0 MHz	1 772.5 MHz	
15 MHz	QPSK	1	0	23.93	23.99	23.83	0
		1	36	24.18	24.09	23.87	0
		1	74	24.06	24.06	23.90	0
		36	0	23.22	23.12	22.96	1
		36	18	23.22	23.15	22.95	1
		36	37	23.21	23.11	22.97	1
		75	0	23.26	23.20	23.00	1
	16QAM	1	0	23.54	23.57	23.24	1
		1	36	23.64	23.60	23.30	1
		1	74	23.59	23.55	23.22	1
		36	0	22.48	22.46	22.16	2
		36	18	22.49	22.42	22.18	2
		36	37	22.38	22.38	22.09	2
		75	0	22.52	22.45	22.22	2
	64QAM	1	0	22.52	22.36	22.24	2
		1	36	22.56	22.56	22.34	2
		1	74	22.47	22.60	22.31	2
		36	0	21.38	21.29	21.14	3
		36	18	21.54	21.55	21.32	3
		36	37	21.42	21.34	21.14	3
		75	0	21.56	21.55	21.31	3

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (60) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 022	132 322	132 622	
				1 715.0 MHz	1 745.0 MHz	1 775.0 MHz	
10 MHz	QPSK	1	0	23.91	23.98	23.68	0
		1	25	24.05	24.04	23.84	0
		1	49	24.06	24.00	23.76	0
		25	0	23.10	23.11	22.86	1
		25	12	23.18	23.12	22.85	1
		25	25	23.14	23.11	22.85	1
		50	0	23.16	23.08	22.88	1
	16QAM	1	0	23.33	23.47	23.11	1
		1	25	23.35	23.58	23.19	1
		1	49	23.72	23.61	23.15	1
		25	0	22.38	22.39	22.09	2
		25	12	22.45	22.47	22.16	2
		25	25	22.45	22.36	22.12	2
		50	0	22.50	22.44	22.19	2
	64QAM	1	0	22.44	22.28	22.16	2
		1	25	22.47	22.47	22.25	2
		1	49	22.50	22.63	22.34	2
		25	0	21.29	21.20	21.05	3
		25	12	21.48	21.49	21.26	3
		25	25	21.36	21.28	21.08	3
		50	0	21.41	21.40	21.16	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 997	132 322	132 647	
				1 712.5 MHz	1 745.0 MHz	1 777.5 MHz	
5 MHz	QPSK	1	0	24.00	23.95	23.80	0
		1	12	24.13	24.08	23.88	0
		1	24	24.04	24.05	23.82	0
		12	0	23.25	23.16	22.91	1
		12	7	23.17	23.15	22.88	1
		12	13	23.09	23.11	22.87	1
		25	0	23.21	23.18	22.92	1
	16QAM	1	0	23.43	23.52	23.16	1
		1	12	23.46	23.26	23.26	1
		1	24	23.43	23.45	23.23	1
		12	0	22.41	22.44	22.07	2
		12	7	22.49	22.37	22.13	2
		12	13	22.44	22.39	22.11	2
		25	0	22.46	22.40	22.17	2
	64QAM	1	0	22.63	22.47	22.35	2
		1	12	22.44	22.44	22.22	2
		1	24	22.53	22.55	22.37	2
		12	0	21.51	21.42	21.27	3
		12	7	21.56	21.57	21.34	3
		12	13	21.60	21.52	21.32	3
		25	0	21.42	21.41	21.17	3

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (61) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 987	132 322	132 657	
				1 711.5 MHz	1 745.0 MHz	1 778.5 MHz	
3 MHz	QPSK	1	0	24.05	24.00	23.85	0
		1	8	24.13	24.07	23.85	0
		1	14	24.07	23.98	23.77	0
		8	0	23.19	23.13	22.96	1
		8	4	23.17	23.07	22.85	1
		8	7	23.15	23.12	22.83	1
		15	0	23.20	23.15	22.85	1
	16QAM	1	0	23.66	23.48	22.93	1
		1	8	23.59	23.44	22.88	1
		1	14	23.46	23.46	23.05	1
		8	0	22.27	22.40	22.13	2
		8	4	22.44	22.36	22.27	2
		8	7	22.48	22.33	22.17	2
		15	0	22.50	22.42	22.07	2
	64QAM	1	0	22.42	22.26	22.14	2
		1	8	22.51	22.51	22.29	2
		1	14	22.60	22.63	22.44	2
		8	0	21.43	21.34	21.19	3
		8	4	21.56	21.57	21.34	3
		8	7	21.55	21.47	21.27	3
		15	0	21.52	21.51	21.27	3

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 979	132 322	132 665	
				1 710.7 MHz	1 745.0 MHz	1 779.3 MHz	
1.4 MHz	QPSK	1	0	24.08	24.06	23.84	0
		1	3	24.05	24.02	23.94	0
		1	5	24.03	24.00	23.90	0
		3	0	24.19	24.11	24.01	0
		3	1	24.13	24.20	23.97	0
		3	3	24.09	24.07	23.98	0
		6	0	23.12	23.16	22.99	1
	16QAM	1	0	23.65	23.62	23.25	1
		1	3	23.31	23.56	23.20	1
		1	5	23.54	23.50	23.16	1
		3	0	23.50	23.15	23.17	1
		3	1	23.37	23.19	23.40	1
		3	3	23.49	23.32	23.37	1
		6	0	22.36	22.34	22.23	2
	64QAM	1	0	22.65	22.49	22.37	2
		1	3	22.57	22.57	22.35	2
		1	5	22.37	22.50	22.21	2
		3	0	22.33	22.28	22.13	2
		3	1	22.48	22.49	22.26	2
		3	3	22.36	22.28	22.08	2
		6	0	21.47	21.46	21.22	3

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (62) of (338)



9.8 LTE Average Conducted Output Power (Reduced Average Power-Grip Sensor)

9.8.1 LTE Band 2

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 700	18 900	19 100	
				1 860.0 MHz	1 880.0 MHz	1 900.0 MHz	
20 MHz	QPSK	1	0	14.01	13.98	14.14	0
		1	49	14.05	14.09	14.23	0
		1	99	14.02	14.06	14.20	0
		50	0	14.01	14.00	14.18	0
		50	24	14.05	14.11	14.25	0
		50	50	14.01	14.04	14.21	0
		100	0	14.08	14.12	14.26	0
	16QAM	1	0	14.09	14.17	14.42	0
		1	49	14.21	14.17	14.48	0
		1	99	14.19	14.24	14.34	0
		50	0	13.98	13.98	14.21	0
		50	24	14.09	14.05	14.24	0
		50	50	14.03	14.06	14.19	0
		100	0	14.11	14.14	14.26	0
	64QAM	1	0	14.31	14.30	14.28	0
		1	49	14.40	14.40	14.27	0
		1	99	14.41	14.41	14.28	0
		50	0	14.20	14.18	14.43	0
		50	24	14.20	14.16	14.45	0
		50	50	14.21	14.23	14.43	0
		100	0	14.26	14.24	14.50	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 675	18 900	19 125	
				1 857.5 MHz	1 880.0 MHz	1 902.5 MHz	
15 MHz	QPSK	1	0	13.92	14.03	14.08	0
		1	36	14.04	14.09	14.17	0
		1	74	13.98	14.09	14.11	0
		36	0	13.98	14.08	14.20	0
		36	18	13.99	14.08	14.20	0
		36	37	13.96	14.07	14.11	0
		75	0	14.01	14.08	14.17	0
	16QAM	1	0	14.14	14.09	14.21	0
		1	36	14.35	14.21	14.30	0
		1	74	14.25	14.18	14.24	0
		36	0	14.02	14.08	14.16	0
		36	18	14.04	14.12	14.19	0
		36	37	13.98	14.04	14.15	0
		75	0	14.05	14.09	14.18	0
	64QAM	1	0	14.30	14.33	14.24	0
		1	36	14.45	14.33	14.31	0
		1	74	14.41	14.46	14.36	0
		36	0	14.11	14.28	14.43	0
		36	18	14.23	14.22	14.41	0
		36	37	14.11	14.15	14.37	0
		75	0	14.20	14.19	14.48	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (63) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 650	18 900	19 150	
				1 855.0 MHz	1 880.0 MHz	1 905.0 MHz	
10 MHz	QPSK	1	0	13.94	13.98	14.08	0
		1	25	14.01	14.08	14.17	0
		1	49	13.91	14.07	14.16	0
		25	0	13.93	14.04	14.14	0
		25	12	14.01	14.09	14.16	0
		25	25	13.95	14.06	14.10	0
		50	0	13.99	14.10	14.15	0
	16QAM	1	0	14.12	14.18	14.03	0
		1	25	14.34	14.10	14.11	0
		1	49	14.02	14.11	14.09	0
		25	0	13.99	14.06	14.09	0
		25	12	14.07	14.14	14.23	0
		25	25	13.99	14.05	14.18	0
		50	0	14.04	14.10	14.17	0
	64QAM	1	0	14.39	14.32	14.34	0
		1	25	14.30	14.48	14.33	0
		1	49	14.47	14.33	14.32	0
		25	0	14.12	14.16	14.41	0
		25	12	14.13	14.10	14.48	0
		25	25	14.27	14.23	14.48	0
		50	0	14.35	14.20	14.43	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 625	18 900	19 175	
				1 852.5 MHz	1 880.0 MHz	1 907.5 MHz	
5 MHz	QPSK	1	0	13.89	14.04	14.05	0
		1	12	14.00	14.11	14.08	0
		1	24	13.92	14.08	14.10	0
		12	0	13.88	14.13	14.10	0
		12	7	13.87	14.08	14.09	0
		12	13	13.86	14.04	14.04	0
		25	0	13.87	14.07	14.07	0
	16QAM	1	0	13.92	14.49	14.35	0
		1	12	14.17	13.88	14.36	0
		1	24	14.15	13.84	14.27	0
		12	0	13.92	14.06	14.11	0
		12	7	13.91	14.06	14.12	0
		12	13	13.86	14.00	14.08	0
		25	0	13.88	14.04	14.07	0
	64QAM	1	0	14.36	14.33	14.37	0
		1	12	14.39	14.37	14.29	0
		1	24	14.38	14.34	14.25	0
		12	0	14.18	14.27	14.39	0
		12	7	14.27	14.11	14.48	0
		12	13	14.17	14.18	14.47	0
		25	0	14.24	14.31	14.43	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (64) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 615	18 900	19 185	
				1 851.5 MHz	1 880.0 MHz	1 908.5 MHz	
3 MHz	QPSK	1	0	13.90	14.16	14.15	0
		1	8	13.85	14.19	14.14	0
		1	14	13.85	14.14	14.20	0
		8	0	13.91	14.09	14.12	0
		8	4	13.84	14.07	14.05	0
		8	7	13.88	14.06	14.08	0
		15	0	13.86	14.08	14.06	0
	16QAM	1	0	13.95	14.43	14.43	0
		1	8	14.20	14.09	14.03	0
		1	14	13.84	14.08	14.01	0
		8	0	14.00	14.12	14.13	0
		8	4	14.03	14.09	14.08	0
		8	7	14.08	14.09	14.06	0
		15	0	13.93	14.10	14.07	0
	64QAM	1	0	14.24	14.21	14.18	0
		1	8	14.36	14.35	14.26	0
		1	14	14.39	14.43	14.29	0
		8	0	14.11	14.27	14.33	0
		8	4	14.28	14.08	14.41	0
		8	7	14.19	14.15	14.48	0
		15	0	14.31	14.27	14.44	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 607	18 900	19 193	
				1 850.7 MHz	1 880.0 MHz	1 909.3 MHz	
1.4 MHz	QPSK	1	0	14.01	14.18	14.02	0
		1	3	13.89	14.08	14.00	0
		1	5	14.00	14.13	13.89	0
		3	0	13.87	14.01	13.91	0
		3	1	13.85	14.06	13.89	0
		3	3	13.92	14.07	13.87	0
		6	0	13.89	14.09	13.90	0
	16QAM	1	0	14.08	14.28	14.16	0
		1	3	14.07	14.18	14.02	0
		1	5	14.03	14.03	14.10	0
		3	0	13.81	14.02	14.00	0
		3	1	13.92	14.15	13.99	0
		3	3	13.95	14.11	13.92	0
		6	0	13.98	13.95	13.85	0
	64QAM	1	0	14.26	14.28	14.37	0
		1	3	14.45	14.45	14.23	0
		1	5	14.45	14.34	14.29	0
		3	0	14.17	14.25	14.49	0
		3	1	14.21	14.18	14.42	0
		3	3	14.28	14.17	14.46	0
		6	0	14.21	14.27	14.45	0

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (65) of (338)

**9.8.2 LTE Band 5**

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				20 525		
				836.5 MHz		
10 MHz	QPSK	1	0	18.82	0	
		1	25	18.91	0	
		1	49	18.89	0	
		25	0	18.87	0	
		25	12	18.91	0	
		25	25	18.88	0	
		50	0	18.92	0	
	16QAM	1	0	19.06	0	
		1	25	19.11	0	
		1	49	19.08	0	
		25	0	18.91	0	
		25	12	18.97	0	
		25	25	18.92	0	
		50	0	18.94	0	
	64QAM	1	0	19.21	0	
		1	25	19.31	0	
		1	49	19.13	0	
		25	0	19.07	0	
		25	12	19.12	0	
		25	25	18.99	0	
		50	0	19.02	0	

10 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 425	20 525	20 625	
				826.5 MHz	836.5 MHz	846.5 MHz	
5 MHz	QPSK	1	0	18.68	18.84	18.70	0
		1	12	18.76	18.95	18.78	0
		1	24	18.78	18.90	18.75	0
		12	0	18.78	18.95	18.87	0
		12	7	18.74	18.88	18.82	0
		12	13	18.73	18.88	18.83	0
		25	0	18.76	18.91	18.86	0
	16QAM	1	0	18.85	19.13	19.03	0
		1	12	18.90	19.18	19.06	0
		1	24	18.87	19.19	19.00	0
		12	0	18.78	18.92	18.89	0
		12	7	18.81	18.90	18.90	0
		12	13	18.74	18.90	18.89	0
		25	0	18.81	18.89	18.88	0
	64QAM	1	0	19.02	19.21	19.07	0
		1	12	18.85	19.24	19.08	0
		1	24	19.00	19.10	18.81	0
		12	0	18.91	19.10	18.82	0
		12	7	18.94	19.11	18.93	0
		12	13	19.01	19.01	18.89	0
		25	0	18.95	19.11	18.86	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (66) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 415	20 525	20 635	
				825.5 MHz	836.5 MHz	847.5 MHz	
3 MHz	QPSK	1	0	18.79	18.97	18.88	0
		1	8	18.71	18.96	18.85	0
		1	14	18.68	18.97	18.88	0
		8	0	18.74	18.87	18.81	0
		8	4	18.72	18.89	18.81	0
		8	7	18.73	18.84	18.81	0
	16QAM	15	0	18.76	18.91	18.87	0
		1	0	19.00	19.00	18.93	0
		1	8	18.81	19.01	18.96	0
		1	14	18.82	19.03	18.93	0
		8	0	18.81	18.90	18.86	0
		8	4	18.78	18.84	18.84	0
	64QAM	8	7	18.78	18.89	18.84	0
		15	0	18.78	18.98	18.86	0
		1	0	18.98	19.23	19.05	0
		1	8	18.94	19.38	18.96	0
		1	14	19.11	19.09	18.89	0
		8	0	18.89	19.02	18.90	0
		8	4	19.06	19.17	18.96	0
		8	7	18.91	19.03	18.96	0
		15	0	19.09	19.07	18.90	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 407	20 525	20 643	
				824.7 MHz	836.5 MHz	848.3 MHz	
1.4 MHz	QPSK	1	0	18.77	18.98	18.91	0
		1	3	18.66	18.88	18.80	0
		1	5	18.69	18.89	18.81	0
		3	0	18.58	18.84	18.86	0
		3	1	18.63	18.87	18.84	0
		3	3	18.65	18.89	18.79	0
	16QAM	6	0	18.68	18.85	18.79	0
		1	0	18.92	19.03	18.92	0
		1	3	18.75	18.92	18.81	0
		1	5	18.80	18.90	18.72	0
		3	0	18.70	18.93	18.90	0
		3	1	18.75	18.90	18.91	0
	64QAM	3	3	18.65	18.84	18.90	0
		6	0	18.76	18.91	18.93	0
		1	0	18.89	19.17	19.03	0
		1	3	18.85	19.32	19.12	0
		1	5	19.12	19.14	18.86	0
		3	0	18.85	19.01	18.88	0
		3	1	19.03	19.20	18.83	0
		3	3	18.96	18.98	18.82	0
		6	0	19.00	19.08	19.00	0

9.8.3 LTE Band 12

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				23 095		
				707.5 MHz		
10 MHz	QPSK	1	0	16.86	0	
		1	25	16.94	0	
		1	49	16.93	0	
		25	0	16.92	0	
		25	12	16.97	0	
		25	25	16.93	0	
	16QAM	50	0	16.98	0	
		1	0	17.02	0	
		1	25	17.11	0	
		1	49	17.02	0	
		25	0	16.93	0	
		25	12	16.99	0	
	64QAM	25	25	16.94	0	
		50	0	16.98	0	
		1	0	17.32	0	
		1	25	17.35	0	
		1	49	17.31	0	
		25	0	17.24	0	
	25	12	17.24	0		
	25	25	17.22	0		
	50	0	17.26	0		

10 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 035	23 095	23 155	
				701.5 MHz	707.5 MHz	713.5 MHz	
5 MHz	QPSK	1	0	16.86	16.87	16.92	0
		1	12	16.89	16.95	16.99	0
		1	24	16.94	16.93	16.97	0
		12	0	16.94	16.97	17.02	0
		12	7	16.91	16.96	17.00	0
		12	13	16.89	16.93	16.99	0
		25	0	16.91	16.99	17.01	0
	16QAM	1	0	16.92	17.01	17.13	0
		1	12	16.97	16.98	17.03	0
		1	24	17.01	17.12	16.98	0
		12	0	16.89	16.93	17.11	0
		12	7	16.87	16.91	17.03	0
		12	13	16.87	16.91	17.04	0
		25	0	16.91	16.93	17.02	0
	64QAM	1	0	17.17	17.30	17.24	0
		1	12	17.33	17.20	17.31	0
		1	24	17.01	17.13	17.36	0
		12	0	17.09	17.17	17.16	0
		12	7	17.04	17.10	17.29	0
		12	13	17.12	17.14	17.12	0
		25	0	17.06	17.16	17.21	0

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (68) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 025	23 095	23 655	
				700.5 MHz	707.5 MHz	714.5 MHz	
3 MHz	QPSK	1	0	16.98	17.03	17.08	0
		1	8	16.91	17.03	17.09	0
		1	14	16.86	17.03	17.08	0
		8	0	16.90	16.96	17.00	0
		8	4	16.90	16.97	16.97	0
		8	7	16.88	16.94	16.97	0
		15	0	16.92	16.96	17.01	0
	16QAM	1	0	17.13	17.27	17.05	0
		1	8	17.04	17.27	17.11	0
		1	14	17.00	17.25	17.12	0
		8	0	17.00	16.95	17.03	0
		8	4	16.95	16.90	17.04	0
		8	7	17.00	16.90	17.01	0
		15	0	16.93	17.04	16.96	0
	64QAM	1	0	17.26	17.38	17.33	0
		1	8	17.32	17.30	17.27	0
		1	14	17.10	17.29	17.31	0
		8	0	17.15	17.29	17.27	0
		8	4	17.15	17.28	17.24	0
		8	7	17.10	17.16	17.22	0
		15	0	17.26	17.27	17.33	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 017	23 095	23 173	
				699.8 MHz	707.5 MHz	715.3 MHz	
1.4 MHz	QPSK	1	0	17.02	17.11	17.12	0
		1	3	16.90	16.96	17.02	0
		1	5	16.93	17.01	17.03	0
		3	0	16.86	16.88	17.00	0
		3	1	16.88	16.90	16.98	0
		3	3	16.93	16.92	16.92	0
		6	0	16.91	17.00	16.96	0
	16QAM	1	0	17.09	17.18	16.99	0
		1	3	16.96	17.09	16.92	0
		1	5	16.97	17.06	16.95	0
		3	0	16.93	16.84	17.06	0
		3	1	16.94	16.87	17.10	0
		3	3	16.93	16.88	17.06	0
		6	0	16.98	17.00	17.01	0
	64QAM	1	0	17.25	17.26	17.25	0
		1	3	17.32	17.32	17.32	0
		1	5	17.16	17.23	17.34	0
		3	0	17.16	17.16	17.37	0
		3	1	17.25	17.28	17.26	0
		3	3	17.07	17.23	17.18	0
		6	0	17.23	17.18	17.34	0

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (69) of (338)

**9.8.4 LTE Band 13**

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				23 230		
				782.0 MHz		
10 MHz	QPSK	1	0	16.71	0	
		1	25	16.78	0	
		1	49	16.72	0	
		25	0	16.75	0	
		25	12	16.81	0	
		25	25	16.78	0	
		50	0	16.82	0	
	16QAM	1	0	16.85	0	
		1	25	16.96	0	
		1	49	16.84	0	
		25	0	16.71	0	
		25	12	16.79	0	
		25	25	16.74	0	
		50	0	16.83	0	
	64QAM	1	0	17.18	0	
		1	25	17.02	0	
		1	49	17.03	0	
		25	0	17.05	0	
		25	12	17.07	0	
		25	25	16.98	0	
		50	0	17.09	0	

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				23 230		
				782.0 MHz		
5 MHz	QPSK	1	0	16.72	0	
		1	12	16.84	0	
		1	24	16.79	0	
		12	0	16.82	0	
		12	7	16.82	0	
		12	13	16.80	0	
		25	0	16.82	0	
	16QAM	1	0	16.82	0	
		1	12	16.95	0	
		1	24	16.88	0	
		12	0	16.75	0	
		12	7	16.75	0	
		12	13	16.72	0	
		25	0	16.78	0	
	64QAM	1	0	17.08	0	
		1	12	17.07	0	
		1	24	17.05	0	
		12	0	17.08	0	
		12	7	17.15	0	
		12	13	17.04	0	
		25	0	17.06	0	

5 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (70) of (338)

**9.8.5 LTE Band 41**

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
20 MHz	QPSK	1	0	14.09	13.87	13.62	13.87	14.10	0
		1	49	14.23	13.99	13.78	13.98	14.23	0
		1	99	14.25	14.04	13.74	13.97	14.24	0
		50	0	14.10	13.86	13.61	13.84	14.08	0
		50	24	14.21	13.96	13.73	13.94	14.17	0
		50	50	14.12	13.95	13.67	13.88	14.19	0
	16QAM	100	0	14.33	14.03	13.82	14.02	14.28	0
		1	0	14.11	13.91	13.83	13.90	14.16	0
		1	49	14.17	14.07	13.92	13.97	14.29	0
		1	99	14.29	14.05	13.88	13.96	14.35	0
		50	0	14.10	13.78	13.69	13.82	14.01	0
		50	24	14.18	13.87	13.78	13.90	14.13	0
	64QAM	50	50	14.15	13.88	13.73	13.87	14.05	0
		100	0	14.31	14.01	13.85	13.98	14.25	0
		1	0	13.94	13.58	13.28	13.49	13.79	0
		1	49	14.02	13.63	13.42	13.53	13.85	0
		1	99	13.98	13.79	13.38	13.53	13.94	0
		50	0	14.09	13.77	13.53	13.77	14.03	0
		50	24	14.13	13.85	13.63	13.81	14.07	0
		50	50	14.10	13.86	13.58	13.73	14.03	0
		100	0	14.21	13.92	13.68	13.84	14.13	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
15 MHz	QPSK	1	0	14.07	13.85	13.56	13.91	14.08	0
		1	36	14.22	13.96	13.69	13.98	14.17	0
		1	74	14.17	14.01	13.70	13.96	14.16	0
		36	0	14.16	13.98	13.65	13.96	14.20	0
		36	18	14.20	14.00	13.72	13.96	14.20	0
		36	37	14.16	13.92	13.65	13.93	14.15	0
		75	0	14.31	14.06	13.79	14.03	14.26	0
	16QAM	1	0	14.29	13.86	13.49	14.02	13.94	0
		1	36	14.36	14.04	13.60	14.12	14.14	0
		1	74	14.39	13.98	13.55	14.09	14.06	0
		36	0	14.16	13.91	13.68	13.92	14.14	0
		36	18	14.20	13.91	13.70	13.94	14.15	0
		36	37	14.16	13.93	13.66	13.91	14.16	0
		75	0	14.29	14.02	13.79	14.02	14.23	0
	64QAM	1	0	13.86	13.67	13.34	13.47	13.74	0
		1	36	14.00	13.57	13.49	13.50	13.90	0
		1	74	14.05	13.71	13.48	13.61	14.02	0
		36	0	14.19	13.76	13.61	13.70	14.07	0
		36	18	14.10	13.84	13.65	13.88	14.12	0
		36	37	14.10	13.80	13.53	13.80	13.95	0
		75	0	14.26	13.85	13.72	13.77	14.14	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (71) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
10 MHz	QPSK	1	0	14.10	13.90	13.66	13.84	14.10	0
		1	25	14.21	13.95	13.71	13.95	14.20	0
		1	49	14.18	13.93	13.65	13.92	14.16	0
		25	0	14.16	13.91	13.67	13.87	14.17	0
		25	12	14.18	13.97	13.71	13.92	14.21	0
		25	25	14.16	13.94	13.63	13.88	14.18	0
		50	0	14.30	14.02	13.78	13.96	14.24	0
	16QAM	1	0	14.23	13.61	13.46	13.82	14.00	0
		1	25	14.32	13.96	13.58	14.00	14.07	0
		1	49	14.28	13.91	13.59	13.88	13.92	0
		25	0	14.15	13.88	13.66	13.85	14.12	0
		25	12	14.22	13.95	13.69	13.88	14.14	0
		25	25	14.14	13.88	13.67	13.86	14.13	0
		50	0	14.25	14.03	13.80	13.97	14.20	0
	64QAM	1	0	13.84	13.53	13.28	13.47	13.70	0
		1	25	13.97	13.68	13.47	13.59	13.87	0
		1	49	13.92	13.76	13.29	13.44	13.91	0
		25	0	14.12	13.80	13.43	13.81	14.10	0
		25	12	14.09	13.90	13.61	13.72	14.09	0
		25	25	14.03	13.79	13.52	13.65	14.04	0
		50	0	14.14	14.02	13.58	13.81	14.14	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
5 MHz	QPSK	1	0	14.27	13.94	13.71	13.90	14.23	0
		1	12	14.30	14.09	13.81	13.82	14.21	0
		1	24	14.24	13.91	13.70	13.90	14.21	0
		12	0	14.21	14.01	13.73	13.94	14.24	0
		12	7	14.23	13.95	13.68	13.90	14.22	0
		12	13	14.20	13.94	13.68	13.89	14.24	0
		25	0	14.29	14.04	13.77	13.98	14.23	0
	16QAM	1	0	14.02	13.82	13.60	13.85	14.09	0
		1	12	14.12	14.02	13.71	13.70	14.12	0
		1	24	14.17	13.89	13.58	13.80	14.17	0
		12	0	14.28	13.98	13.77	13.97	14.23	0
		12	7	14.25	13.93	13.72	13.92	14.20	0
		12	13	14.21	13.94	13.72	13.92	14.20	0
		25	0	14.29	14.00	13.77	13.95	14.22	0
	64QAM	1	0	14.04	13.50	13.28	13.59	13.72	0
		1	12	14.10	13.70	13.42	13.44	13.78	0
		1	24	13.93	13.69	13.32	13.52	13.97	0
		12	0	14.02	13.86	13.52	13.68	14.01	0
		12	7	14.14	13.82	13.69	13.78	14.17	0
		12	13	14.19	13.94	13.65	13.79	13.97	0
		25	0	14.28	13.84	13.68	13.89	14.16	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (72) of (338)

**9.8.6 LTE Band 66**

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 072	132 322	132 572	
				1 720.0 MHz	1 745.0 MHz	1 770.0 MHz	
20 MHz	QPSK	1	0	14.78	14.65	14.35	0
		1	49	14.81	14.70	14.47	0
		1	99	14.73	14.68	14.42	0
		50	0	14.88	14.77	14.60	0
		50	24	14.90	14.88	14.65	0
		50	50	14.87	14.78	14.61	0
		100	0	14.80	14.79	14.70	0
	16QAM	1	0	14.56	14.47	14.34	0
		1	49	14.90	14.54	14.54	0
		1	99	14.66	14.52	14.43	0
		50	0	14.85	14.78	14.54	0
		50	24	14.94	14.82	14.63	0
		50	50	14.86	14.76	14.55	0
		100	0	14.96	14.87	14.64	0
	64QAM	1	0	14.83	14.61	14.60	0
		1	49	14.89	14.86	14.77	0
		1	99	14.92	14.89	14.57	0
		50	0	14.84	14.76	14.56	0
		50	24	14.96	14.89	14.60	0
		50	50	14.82	14.77	14.58	0
		100	0	14.95	14.82	14.66	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 047	132 322	132 597	
				1 717.5 MHz	1 745.0 MHz	1 772.5 MHz	
15 MHz	QPSK	1	0	14.62	14.61	14.43	0
		1	36	14.82	14.64	14.45	0
		1	74	14.66	14.57	14.36	0
		36	0	14.98	14.89	14.68	0
		36	18	14.95	14.92	14.63	0
		36	37	14.85	14.84	14.59	0
		75	0	14.94	14.90	14.68	0
	16QAM	1	0	14.55	14.75	14.46	0
		1	36	14.95	14.84	14.42	0
		1	74	14.82	14.67	14.09	0
		36	0	14.93	14.88	14.62	0
		36	18	14.96	14.91	14.61	0
		36	37	14.88	14.85	14.54	0
		75	0	14.92	14.88	14.65	0
	64QAM	1	0	14.73	14.58	14.66	0
		1	36	14.82	14.83	14.68	0
		1	74	14.92	14.83	14.65	0
		36	0	14.82	14.84	14.61	0
		36	18	14.95	14.93	14.55	0
		36	37	14.91	14.78	14.52	0
		75	0	14.96	14.92	14.66	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (73) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 022	132 322	132 622	
				1 715.0 MHz	1 745.0 MHz	1 775.0 MHz	
10 MHz	QPSK	1	0	14.68	14.57	14.42	0
		1	25	14.72	14.62	14.61	0
		1	49	14.59	14.60	14.56	0
		25	0	14.84	14.83	14.55	0
		25	12	14.87	14.87	14.63	0
		25	25	14.87	14.84	14.56	0
		50	0	14.90	14.86	14.59	0
	16QAM	1	0	14.64	14.60	14.34	0
		1	25	14.76	14.70	14.52	0
		1	49	14.58	14.70	14.42	0
		25	0	14.81	14.85	14.53	0
		25	12	14.87	14.88	14.58	0
		25	25	14.85	14.87	14.56	0
		50	0	14.93	14.84	14.59	0
	64QAM	1	0	14.92	14.68	14.55	0
		1	25	14.89	14.87	14.72	0
		1	49	14.93	14.90	14.67	0
		25	0	14.86	14.76	14.60	0
		25	12	14.94	14.79	14.69	0
		25	25	14.87	14.81	14.55	0
		50	0	14.89	14.84	14.75	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 997	132 322	132 647	
				1 712.5 MHz	1 745.0 MHz	1 777.5 MHz	
5 MHz	QPSK	1	0	14.78	14.67	14.33	0
		1	12	14.74	14.75	14.38	0
		1	24	14.82	14.75	14.40	0
		12	0	14.92	14.88	14.64	0
		12	7	14.89	14.86	14.59	0
		12	13	14.88	14.86	14.57	0
		25	0	14.92	14.84	14.59	0
	16QAM	1	0	14.57	14.48	14.50	0
		1	12	14.53	14.56	14.47	0
		1	24	14.65	14.53	14.41	0
		12	0	14.87	14.87	14.69	0
		12	7	14.83	14.86	14.61	0
		12	13	14.88	14.86	14.61	0
		25	0	14.91	14.78	14.58	0
	64QAM	1	0	14.91	14.63	14.67	0
		1	12	14.82	14.84	14.76	0
		1	24	15.00	14.84	14.66	0
		12	0	14.93	14.66	14.63	0
		12	7	14.94	14.88	14.52	0
		12	13	14.91	14.84	14.49	0
		25	0	14.89	14.83	14.75	0

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (74) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 987	132 322	132 657	
				1 711.5 MHz	1 745.0 MHz	1 778.5 MHz	
3 MHz	QPSK	1	0	14.87	14.80	14.41	0
		1	8	14.83	14.76	14.44	0
		1	14	14.70	14.78	14.43	0
		8	0	14.95	14.86	14.59	0
		8	4	14.91	14.85	14.59	0
		8	7	14.87	14.82	14.55	0
		15	0	14.86	14.87	14.59	0
	16QAM	1	0	14.97	14.81	14.35	0
		1	8	14.84	14.84	14.36	0
		1	14	14.81	14.83	14.36	0
		8	0	14.97	14.88	14.56	0
		8	4	14.97	14.89	14.56	0
		8	7	14.93	14.88	14.47	0
		15	0	14.94	14.88	14.60	0
	64QAM	1	0	14.77	14.63	14.58	0
		1	8	14.90	14.96	14.68	0
		1	14	14.90	14.98	14.52	0
		8	0	14.79	14.82	14.49	0
		8	4	14.94	14.99	14.67	0
		8	7	14.78	14.68	14.64	0
		15	0	14.86	14.75	14.71	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 979	132 322	132 665	
				1 710.7 MHz	1 745.0 MHz	1 779.3 MHz	
1.4 MHz	QPSK	1	0	14.95	14.99	14.80	0
		1	3	14.94	14.86	14.72	0
		1	5	14.94	14.85	14.66	0
		3	0	14.79	14.78	14.70	0
		3	1	14.84	14.81	14.71	0
		3	3	14.87	14.82	14.64	0
		6	0	14.92	14.86	14.73	0
	16QAM	1	0	14.94	14.93	14.69	0
		1	3	15.00	15.00	14.48	0
		1	5	14.99	14.92	14.56	0
		3	0	14.84	14.71	14.66	0
		3	1	14.87	14.74	14.68	0
		3	3	14.86	14.70	14.66	0
		6	0	14.97	14.82	14.72	0
	64QAM	1	0	14.78	14.55	14.67	0
		1	3	14.96	14.84	14.68	0
		1	5	14.95	14.99	14.63	0
		3	0	14.90	14.85	14.52	0
		3	1	14.86	14.92	14.61	0
		3	3	14.77	14.74	14.49	0
		6	0	14.95	14.92	14.71	0

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (75) of (338)



9.9 LTE Average Conducted Output Power (Reduced Average Power-RCV+Proximity Sensor)

9.9.1 LTE Band 2

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR	
				18 700	18 900	19 100		
				1 860.0 MHz	1 880.0 MHz	1 900.0 MHz		
20 MHz	QPSK	1	0	13.92	14.00	14.17	0	
		1	49	13.98	14.08	14.24	0	
		1	99	13.96	14.00	14.22	0	
		50	0	13.97	13.96	14.18	0	
		50	24	14.04	14.05	14.19	0	
		50	50	13.97	14.03	14.15	0	
		100	0	14.06	14.09	14.18	0	
	16QAM	1	0	13.95	14.20	14.49	0	
		1	49	14.01	14.28	14.46	0	
		1	99	14.01	14.26	14.47	0	
		50	0	14.01	14.01	14.13	0	
		50	24	14.00	14.09	14.22	0	
		50	50	13.98	14.01	14.14	0	
		100	0	14.08	14.09	14.23	0	
	64QAM	1	0	14.31	14.20	14.26	0	
		1	49	14.32	14.48	14.26	0	
		1	99	14.22	14.47	14.22	0	
		50	0	14.07	14.14	14.39	0	
		50	24	14.19	14.19	14.39	0	
		50	50	14.15	14.16	14.42	0	
		100	0	14.23	14.20	14.46	0	
	Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
					18 675	18 900	19 125	
					1 857.5 MHz	1 880.0 MHz	1 902.5 MHz	
15 MHz	QPSK	1	0	13.83	14.04	14.10	0	
		1	36	13.92	14.04	14.13	0	
		1	74	13.87	14.02	14.06	0	
		36	0	13.94	14.05	14.13	0	
		36	18	13.95	14.03	14.13	0	
		36	37	13.92	13.98	14.06	0	
		75	0	13.98	14.09	14.15	0	
	16QAM	1	0	13.89	14.16	14.09	0	
		1	36	14.07	14.19	14.12	0	
		1	74	13.98	14.18	14.09	0	
		36	0	13.96	14.10	14.10	0	
		36	18	13.94	14.11	14.10	0	
		36	37	13.92	14.02	14.06	0	
		75	0	14.01	14.09	14.11	0	
	64QAM	1	0	14.33	14.25	14.23	0	
		1	36	14.32	14.33	14.32	0	
		1	74	14.25	14.47	14.24	0	
		36	0	14.00	14.13	14.43	0	
		36	18	14.25	14.26	14.33	0	
		36	37	14.08	14.19	14.50	0	
		75	0	14.19	14.17	14.49	0	

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (76) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 650	18 900	19 150	
				1 855.0 MHz	1 880.0 MHz	1 905.0 MHz	
10 MHz	QPSK	1	0	13.87	14.03	14.02	0
		1	25	13.93	14.10	14.15	0
		1	49	13.91	13.97	14.09	0
		25	0	13.90	13.98	13.99	0
		25	12	13.95	14.03	14.05	0
		25	25	13.94	14.01	14.02	0
		50	0	13.95	14.02	14.05	0
	16QAM	1	0	14.02	14.06	14.28	0
		1	25	14.25	14.19	13.93	0
		1	49	14.00	14.32	13.93	0
		25	0	13.91	13.99	14.09	0
		25	12	13.95	14.07	14.12	0
		25	25	13.94	14.00	14.08	0
		50	0	13.95	14.03	14.07	0
	64QAM	1	0	14.38	14.21	14.22	0
		1	25	14.29	14.49	14.26	0
		1	49	14.28	14.44	14.18	0
		25	0	14.07	14.11	14.43	0
		25	12	14.24	14.24	14.46	0
		25	25	14.19	14.10	14.46	0
		50	0	14.21	14.22	14.50	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 625	18 900	19 175	
				1 852.5 MHz	1 880.0 MHz	1 907.5 MHz	
5 MHz	QPSK	1	0	13.75	13.95	13.97	0
		1	12	13.86	14.12	13.95	0
		1	24	13.81	14.04	13.97	0
		12	0	13.87	14.03	14.06	0
		12	7	13.85	13.98	14.00	0
		12	13	13.84	14.00	13.98	0
		25	0	13.83	14.03	14.02	0
	16QAM	1	0	13.65	14.25	14.23	0
		1	12	13.75	13.98	14.00	0
		1	24	14.24	14.27	14.19	0
		12	0	13.86	14.02	14.05	0
		12	7	13.81	13.99	14.02	0
		12	13	13.85	14.01	13.99	0
		25	0	13.87	13.98	14.02	0
	64QAM	1	0	14.35	14.16	14.21	0
		1	12	14.28	14.41	14.32	0
		1	24	14.24	14.40	14.24	0
		12	0	14.02	14.15	14.45	0
		12	7	14.14	14.25	14.37	0
		12	13	14.14	14.09	14.46	0
		25	0	14.23	14.27	14.49	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (77) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 615	18 900	19 185	
				1 851.5 MHz	1 880.0 MHz	1 908.5 MHz	
3 MHz	QPSK	1	0	13.81	14.05	14.09	0
		1	8	13.73	14.06	14.12	0
		1	14	13.75	14.10	14.08	0
		8	0	13.79	14.01	13.99	0
		8	4	13.76	13.96	13.97	0
		8	7	13.75	13.99	13.98	0
		15	0	13.78	13.96	13.96	0
	16QAM	1	0	14.25	14.25	13.99	0
		1	8	13.88	14.31	14.03	0
		1	14	14.00	14.27	14.04	0
		8	0	13.88	13.96	14.01	0
		8	4	13.93	13.97	13.99	0
		8	7	13.78	13.90	13.92	0
		15	0	13.85	14.02	13.97	0
	64QAM	1	0	14.30	14.26	14.20	0
		1	8	14.25	14.45	14.29	0
		1	14	14.23	14.35	14.15	0
		8	0	14.06	14.22	14.44	0
		8	4	14.12	14.24	14.44	0
		8	7	14.08	14.09	14.46	0
		15	0	14.24	14.18	14.46	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				18 607	18 900	19 193	
				1 850.7 MHz	1 880.0 MHz	1 909.3 MHz	
1.4 MHz	QPSK	1	0	13.89	14.10	13.93	0
		1	3	13.81	13.93	13.89	0
		1	5	13.81	13.99	13.83	0
		3	0	13.71	13.93	13.84	0
		3	1	13.75	13.88	13.82	0
		3	3	13.80	13.98	13.79	0
		6	0	13.79	13.96	13.77	0
	16QAM	1	0	13.97	14.23	13.90	0
		1	3	14.14	14.05	13.80	0
		1	5	13.91	14.12	13.80	0
		3	0	13.92	13.98	13.85	0
		3	1	13.92	13.89	13.88	0
		3	3	13.80	13.79	13.87	0
		6	0	13.82	13.99	13.85	0
	64QAM	1	0	14.38	14.13	14.20	0
		1	3	14.40	14.33	14.30	0
		1	5	14.15	14.48	14.16	0
		3	0	14.12	14.20	14.44	0
		3	1	14.27	14.13	14.46	0
		3	3	14.13	14.23	14.38	0
		6	0	14.23	14.17	14.32	0

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (78) of (338)

**9.9.2 LTE Band 5**

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				20 525		
				836.5 MHz		
10 MHz	QPSK	1	0	18.95	0	
		1	25	19.02	0	
		1	49	19.04	0	
		25	0	19.02	0	
		25	12	19.06	0	
		25	25	19.02	0	
	16QAM	50	0	19.03	0	
		1	0	19.13	0	
		1	25	19.31	0	
		1	49	19.16	0	
		25	0	19.07	0	
		25	12	19.12	0	
	64QAM	25	25	19.08	0	
		50	0	19.09	0	
		1	0	19.34	0	
		1	25	19.12	0	
		1	49	19.19	0	
		25	0	19.10	0	
	25	12	19.12	0		
	25	25	19.12	0		
	50	0	19.12	0		

10 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 425	20 525	20 625	
				826.5 MHz	836.5 MHz	846.5 MHz	
5 MHz	QPSK	1	0	18.91	18.98	18.94	0
		1	12	18.95	19.05	18.96	0
		1	24	18.97	19.09	19.00	0
		12	0	18.97	19.13	19.01	0
		12	7	18.91	19.06	19.03	0
		12	13	18.90	19.02	19.02	0
		25	0	18.95	19.07	19.00	0
	16QAM	1	0	19.08	19.09	19.18	0
		1	12	19.15	19.22	19.23	0
		1	24	19.19	19.20	19.20	0
		12	0	19.02	19.15	19.05	0
		12	7	19.04	19.04	19.02	0
		12	13	18.85	19.05	19.05	0
		25	0	18.91	19.11	19.00	0
	64QAM	1	0	19.21	19.32	18.89	0
		1	12	19.14	19.10	18.84	0
		1	24	19.18	19.26	19.02	0
		12	0	18.91	19.13	18.77	0
		12	7	19.12	19.11	18.94	0
		12	13	19.02	19.11	18.97	0
		25	0	19.07	19.10	18.87	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (79) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 415	20 525	20 635	
				825.5 MHz	836.5 MHz	847.5 MHz	
3 MHz	QPSK	1	0	18.97	19.10	19.02	0
		1	8	18.84	19.10	19.07	0
		1	14	18.85	19.11	19.08	0
		8	0	18.89	19.05	18.95	0
		8	4	18.87	19.06	18.99	0
		8	7	18.83	18.99	18.93	0
		15	0	18.85	19.06	19.02	0
	16QAM	1	0	19.28	19.27	19.16	0
		1	8	19.10	19.26	19.28	0
		1	14	19.09	19.30	19.27	0
		8	0	18.98	19.09	19.04	0
		8	4	18.93	19.11	19.02	0
		8	7	18.96	19.04	19.00	0
		15	0	18.88	19.09	19.08	0
	64QAM	1	0	19.20	19.28	18.90	0
		1	8	19.17	19.08	18.84	0
		1	14	19.19	19.23	19.00	0
		8	0	19.05	19.03	18.87	0
		8	4	19.04	19.13	18.99	0
		8	7	19.03	19.10	18.96	0
		15	0	19.16	19.05	18.89	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				20 407	20 525	20 643	
				824.7 MHz	836.5 MHz	848.3 MHz	
1.4 MHz	QPSK	1	0	18.98	19.17	19.04	0
		1	3	18.87	19.04	18.97	0
		1	5	18.89	19.02	18.97	0
		3	0	18.79	18.97	19.00	0
		3	1	18.81	19.02	19.00	0
		3	3	18.86	19.03	18.90	0
		6	0	18.86	19.02	18.92	0
	16QAM	1	0	18.84	19.28	19.15	0
		1	3	18.73	19.17	19.04	0
		1	5	18.80	19.16	19.02	0
		3	0	18.83	19.00	19.11	0
		3	1	18.87	18.99	19.18	0
		3	3	18.87	18.95	19.11	0
		6	0	18.89	19.08	19.00	0
	64QAM	1	0	19.20	19.40	18.83	0
		1	3	19.20	19.14	18.95	0
		1	5	19.09	19.21	19.04	0
		3	0	19.00	19.07	18.78	0
		3	1	19.00	19.15	18.95	0
		3	3	18.93	19.05	18.90	0
		6	0	19.15	19.19	18.89	0

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (80) of (338)

**9.9.3 LTE Band 12**

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				23 095		
				707.5 MHz		
10 MHz	QPSK	1	0	20.01	0	
		1	25	20.09	0	
		1	49	20.08	0	
		25	0	20.08	0	
		25	12	20.11	0	
		25	25	20.08	0	
		50	0	20.08	0	
	16QAM	1	0	20.08	0	
		1	25	20.25	0	
		1	49	20.20	0	
		25	0	20.13	0	
		25	12	20.15	0	
		25	25	20.11	0	
		50	0	20.15	0	
	64QAM	1	0	20.45	0	
		1	25	20.41	0	
		1	49	20.42	0	
		25	0	20.33	0	
		25	12	20.33	0	
		25	25	20.30	0	
		50	0	20.33	0	

10 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 035	23 095	23 155	
				701.5 MHz	707.5 MHz	713.5 MHz	
5 MHz	QPSK	1	0	20.05	20.07	20.14	0
		1	12	20.11	20.18	20.15	0
		1	24	20.13	20.13	20.20	0
		12	0	20.09	20.13	20.20	0
		12	7	20.06	20.10	20.14	0
		12	13	20.02	20.05	20.12	0
		25	0	20.08	20.12	20.18	0
	16QAM	1	0	20.33	20.27	20.29	0
		1	12	20.34	20.33	20.26	0
		1	24	20.32	20.30	20.16	0
		12	0	20.09	20.15	20.28	0
		12	7	20.07	20.13	20.30	0
		12	13	20.04	20.13	20.27	0
		25	0	20.11	20.07	20.23	0
	64QAM	1	0	20.38	20.43	20.48	0
		1	12	20.31	20.48	20.48	0
		1	24	20.31	20.40	20.36	0
		12	0	20.29	20.38	20.38	0
		12	7	20.45	20.36	20.31	0
		12	13	20.21	20.30	20.22	0
		25	0	20.26	20.31	20.32	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (81) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 025	23 095	23 655	
				700.5 MHz	707.5 MHz	714.5 MHz	
3 MHz	QPSK	1	0	20.16	20.16	20.21	0
		1	8	20.07	20.15	20.10	0
		1	14	20.01	20.23	20.21	0
		8	0	20.03	20.03	20.13	0
		8	4	20.02	20.07	20.10	0
		8	7	20.00	20.03	20.10	0
		15	0	20.06	20.07	20.14	0
	16QAM	1	0	20.33	20.22	19.96	0
		1	8	20.32	20.37	20.37	0
		1	14	20.24	20.29	20.34	0
		8	0	20.14	20.01	20.22	0
		8	4	20.10	19.99	20.23	0
		8	7	20.07	20.05	20.02	0
		15	0	20.06	20.19	20.17	0
	64QAM	1	0	20.29	20.41	20.44	0
		1	8	20.30	20.42	20.45	0
		1	14	20.26	20.42	20.32	0
		8	0	20.21	20.37	20.34	0
		8	4	20.43	20.40	20.34	0
		8	7	20.18	20.33	20.27	0
		15	0	20.20	20.28	20.36	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				23 017	23 095	23 173	
				699.8 MHz	707.5 MHz	715.3 MHz	
1.4 MHz	QPSK	1	0	20.09	20.16	20.25	0
		1	3	20.02	20.08	20.27	0
		1	5	19.98	20.12	20.15	0
		3	0	19.97	20.02	20.07	0
		3	1	19.96	20.04	20.09	0
		3	3	19.98	20.05	20.07	0
		6	0	19.99	20.09	20.03	0
	16QAM	1	0	20.29	20.32	20.31	0
		1	3	20.24	20.08	20.15	0
		1	5	20.19	20.26	20.25	0
		3	0	20.09	20.24	20.27	0
		3	1	20.00	19.93	20.32	0
		3	3	20.11	19.96	20.22	0
		6	0	20.05	20.09	20.22	0
	64QAM	1	0	20.40	20.43	20.44	0
		1	3	20.27	20.36	20.43	0
		1	5	20.19	20.36	20.42	0
		3	0	20.31	20.40	20.45	0
		3	1	20.45	20.34	20.39	0
		3	3	20.20	20.33	20.22	0
		6	0	20.26	20.37	20.33	0

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (82) of (338)

**9.9.4 LTE Band 13**

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				23 230		
				782.0 MHz		
10 MHz	QPSK	1	0	20.07	0	
		1	25	19.96	0	
		1	49	20.03	0	
		25	0	20.41	0	
		25	12	20.48	0	
		25	25	20.46	0	
		50	0	20.46	0	
	16QAM	1	0	20.54	0	
		1	25	20.55	0	
		1	49	20.31	0	
		25	0	20.44	0	
		25	12	20.56	0	
		25	25	20.42	0	
		50	0	20.52	0	
	64QAM	1	0	20.37	0	
		1	25	20.52	0	
		1	49	20.42	0	
		25	0	20.51	0	
		25	12	20.40	0	
		25	25	20.44	0	
		50	0	20.49	0	

Band width	Modulation	RB Size	RB offset	Maximum Average Power		MPR
				23 230		
				782.0 MHz		
5 MHz	QPSK	1	0	19.92	0	
		1	12	19.97	0	
		1	24	19.99	0	
		12	0	20.49	0	
		12	7	20.44	0	
		12	13	20.44	0	
		25	0	20.43	0	
	16QAM	1	0	20.15	0	
		1	12	20.11	0	
		1	24	20.25	0	
		12	0	20.49	0	
		12	7	20.50	0	
		12	13	20.49	0	
		25	0	20.49	0	
	64QAM	1	0	20.22	0	
		1	12	20.15	0	
		1	24	20.05	0	
		12	0	20.35	0	
		12	7	20.45	0	
		12	13	20.41	0	
		25	0	20.38	0	

5 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (83) of (338)

**9.9.5 LTE Band 41**

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
20 MHz	QPSK	1	0	18.20	17.92	17.73	17.98	18.31	0
		1	49	18.23	18.05	17.79	18.04	18.39	0
		1	99	18.26	18.02	17.80	18.05	18.37	0
		50	0	18.20	17.94	17.72	17.99	18.34	0
		50	24	18.27	18.02	17.79	18.03	18.38	0
		50	50	18.22	17.97	17.74	18.00	18.35	0
	16QAM	100	0	18.32	18.06	17.84	18.12	18.33	0
		1	0	18.22	17.79	17.68	17.93	18.28	0
		1	49	18.25	17.93	17.79	18.00	18.33	0
		1	99	18.28	17.88	17.81	18.04	18.32	0
		50	0	18.23	17.93	17.79	18.01	18.29	0
		50	24	18.29	18.00	17.87	18.04	18.34	0
	64QAM	50	50	18.28	17.99	17.81	17.99	18.31	0
		100	0	18.28	18.05	17.90	18.06	18.38	0
		1	0	17.87	17.63	17.26	17.54	17.89	0
		1	49	17.85	17.81	17.31	17.69	17.94	0
		1	99	17.98	17.92	17.34	17.55	17.94	0
		50	0	18.11	17.78	17.54	17.77	18.01	0
15 MHz	QPSK	50	24	18.15	17.87	17.62	17.82	18.07	0
		50	50	18.12	17.87	17.59	17.73	18.00	0
		100	0	18.22	17.94	17.67	17.82	18.12	0
		1	0	18.21	17.92	17.69	17.88	18.28	0
		1	36	18.25	17.99	17.77	17.95	18.35	0
		1	74	18.26	17.95	17.72	17.94	18.29	0
15 MHz	16QAM	36	0	18.25	18.01	17.76	17.94	18.35	0
		36	18	18.30	18.05	17.77	17.97	18.37	0
		36	37	18.21	18.01	17.75	17.94	18.36	0
		75	0	18.30	18.03	17.85	18.02	18.39	0
		1	0	18.34	17.84	17.88	18.08	18.23	0
		1	36	18.44	18.00	17.75	18.19	18.28	0
	64QAM	1	74	18.37	17.96	17.86	18.12	18.30	0
		36	0	18.34	17.99	17.76	18.04	18.35	0
		36	18	18.33	18.03	17.78	18.03	18.33	0
		36	37	18.30	17.96	17.67	17.99	18.36	0
		75	0	18.29	18.02	17.80	18.01	18.36	0
		1	0	17.94	17.56	17.29	17.47	17.83	0
15 MHz	64QAM	1	36	17.88	17.78	17.35	17.63	17.97	0
		1	74	18.02	17.90	17.36	17.51	17.91	0
		36	0	18.16	17.73	17.61	17.83	18.08	0
		36	18	18.12	17.89	17.57	17.81	18.13	0
		36	37	18.11	17.86	17.59	17.80	18.01	0
		75	0	18.15	18.01	17.69	17.75	18.10	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (84) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
10 MHz	QPSK	1	0	18.20	17.93	17.68	17.99	18.29	0
		1	25	18.35	18.05	17.75	18.05	18.37	0
		1	49	18.23	17.97	17.68	18.03	18.34	0
		25	0	18.22	17.96	17.72	17.98	18.34	0
		25	12	18.28	18.01	17.74	18.09	18.36	0
		25	25	18.30	17.98	17.72	17.99	18.41	0
		50	0	18.30	18.03	17.77	17.97	18.40	0
	16QAM	1	0	18.34	18.01	17.71	18.11	18.41	0
		1	25	18.38	18.13	17.72	18.16	18.45	0
		1	49	18.32	18.08	17.66	18.11	18.49	0
		25	0	18.23	17.95	17.75	18.01	18.30	0
		25	12	18.30	18.03	17.78	18.04	18.40	0
		25	25	18.23	17.97	17.79	17.98	18.33	0
		50	0	18.31	18.01	17.79	18.03	18.37	0
	64QAM	1	0	17.83	17.68	17.19	17.53	17.93	0
		1	25	17.86	17.79	17.36	17.70	17.98	0
		1	49	17.99	17.86	17.27	17.52	17.92	0
		25	0	18.06	17.82	17.52	17.70	17.97	0
		25	12	18.08	17.86	17.64	17.82	18.04	0
		25	25	18.17	17.91	17.56	17.73	18.07	0
		50	0	18.24	17.97	17.63	17.80	18.15	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power					MPR
				39 750	40 185	40 620	41 055	41 490	
				2 506.0 MHz	2 549.5 MHz	2 593.0 MHz	2 636.5 MHz	2 680.0 MHz	
5 MHz	QPSK	1	0	18.21	17.91	17.73	18.05	18.33	0
		1	12	18.18	17.92	17.77	18.23	18.45	0
		1	24	18.18	17.92	17.70	18.04	18.35	0
		12	0	18.27	18.01	17.79	18.04	18.42	0
		12	7	18.26	18.01	17.74	18.01	18.35	0
		12	13	18.22	18.01	17.70	17.99	18.36	0
		25	0	18.26	18.00	17.74	18.03	18.37	0
	16QAM	1	0	18.15	17.92	17.74	17.92	18.29	0
		1	12	18.18	18.01	17.77	18.25	18.43	0
		1	24	18.22	18.05	17.71	18.07	18.50	0
		12	0	18.28	18.01	17.81	17.98	18.39	0
		12	7	18.26	17.98	17.83	17.99	18.38	0
		12	13	18.25	17.97	17.77	18.01	18.34	0
		25	0	18.26	17.98	17.76	18.02	18.41	0
	64QAM	1	0	17.88	17.69	17.28	17.47	17.82	0
		1	12	17.80	17.82	17.38	17.71	17.96	0
		1	24	17.92	17.99	17.32	17.61	17.99	0
		12	0	18.10	17.81	17.48	17.75	18.00	0
		12	7	18.12	17.80	17.61	17.87	18.03	0
		12	13	18.18	17.88	17.52	17.79	18.01	0
		25	0	18.21	17.95	17.70	17.75	18.05	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (85) of (338)

**9.9.6 LTE Band 66**

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 072	132 322	132 572	
				1 720.0 MHz	1 745.0 MHz	1 770.0 MHz	
20 MHz	QPSK	1	0	14.39	14.30	14.00	0
		1	49	14.34	14.31	14.12	0
		1	99	14.32	14.27	14.01	0
		50	0	14.91	14.83	14.59	0
		50	24	14.96	14.87	14.66	0
		50	50	14.88	14.80	14.59	0
		100	0	14.90	14.89	14.70	0
	16QAM	1	0	14.42	14.35	14.12	0
		1	49	14.51	14.42	14.27	0
		1	99	14.41	14.39	14.22	0
		50	0	14.75	14.65	14.39	0
		50	24	14.78	14.72	14.49	0
		50	50	14.72	14.69	14.40	0
		100	0	14.81	14.76	14.55	0
	64QAM	1	0	14.42	14.29	14.06	0
		1	49	14.55	14.38	14.13	0
		1	99	14.40	14.41	14.10	0
		50	0	14.35	14.24	13.97	0
		50	24	14.48	14.27	14.09	0
		50	50	14.35	14.31	14.07	0
		100	0	14.40	14.36	14.15	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 047	132 322	132 597	
				1 717.5 MHz	1 745.0 MHz	1 772.5 MHz	
15 MHz	QPSK	1	0	14.32	14.26	13.98	0
		1	36	14.35	14.28	14.01	0
		1	74	14.31	14.25	14.00	0
		36	0	14.83	14.75	14.53	0
		36	18	14.79	14.76	14.54	0
		36	37	14.71	14.72	14.46	0
		75	0	14.83	14.81	14.55	0
	16QAM	1	0	14.45	14.39	14.01	0
		1	36	14.49	14.48	14.06	0
		1	74	14.43	14.46	13.93	0
		36	0	14.78	14.73	14.45	0
		36	18	14.81	14.77	14.49	0
		36	37	14.74	14.71	14.48	0
		75	0	14.83	14.76	14.51	0
	64QAM	1	0	14.38	14.33	14.02	0
		1	36	14.56	14.35	14.06	0
		1	74	14.40	14.41	14.03	0
		36	0	14.36	14.25	13.98	0
		36	18	14.45	14.33	14.15	0
		36	37	14.30	14.28	14.07	0
		75	0	14.45	14.32	14.20	0

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (86) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				132 022	132 322	132 622	
				1 715.0 MHz	1 745.0 MHz	1 775.0 MHz	
10 MHz	QPSK	1	0	14.22	14.26	14.42	0
		1	25	14.28	14.29	14.08	0
		1	49	14.23	14.31	14.54	0
		25	0	14.67	14.69	14.44	0
		25	12	14.71	14.72	14.48	0
		25	25	14.65	14.72	14.44	0
		50	0	14.76	14.75	14.49	0
	16QAM	1	0	14.65	14.35	14.02	0
		1	25	14.54	14.56	14.00	0
		1	49	14.61	14.53	14.08	0
		25	0	14.73	14.73	14.39	0
		25	12	14.71	14.77	14.46	0
		25	25	14.73	14.72	14.40	0
		50	0	14.76	14.70	14.45	0
	64QAM	1	0	14.41	14.30	14.00	0
		1	25	14.60	14.44	14.09	0
		1	49	14.41	14.38	14.14	0
		25	0	14.28	14.26	13.97	0
		25	12	14.42	14.33	14.07	0
		25	25	14.35	14.25	14.05	0
		50	0	14.36	14.36	14.18	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 997	132 322	132 647	
				1 712.5 MHz	1 745.0 MHz	1 777.5 MHz	
5 MHz	QPSK	1	0	14.27	14.25	14.00	0
		1	12	14.26	14.33	14.10	0
		1	24	14.25	14.37	14.07	0
		12	0	14.62	14.58	14.38	0
		12	7	14.60	14.57	14.34	0
		12	13	14.57	14.52	14.31	0
		25	0	14.61	14.56	14.31	0
	16QAM	1	0	14.23	14.32	13.98	0
		1	12	14.32	14.56	14.19	0
		1	24	14.37	14.45	14.57	0
		12	0	14.73	14.68	14.56	0
		12	7	14.69	14.63	14.55	0
		12	13	14.72	14.65	14.49	0
		25	0	14.74	14.66	14.44	0
	64QAM	1	0	14.46	14.35	14.13	0
		1	12	14.54	14.33	14.08	0
		1	24	14.35	14.37	14.03	0
		12	0	14.41	14.23	13.91	0
		12	7	14.47	14.26	14.02	0
		12	13	14.34	14.35	14.10	0
		25	0	14.37	14.40	14.22	0

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (87) of (338)



Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 987	132 322	132 657	
				1 711.5 MHz	1 745.0 MHz	1 778.5 MHz	
3 MHz	QPSK	1	0	14.47	14.40	14.10	0
		1	8	14.47	14.33	14.14	0
		1	14	14.37	14.35	14.12	0
		8	0	14.83	14.73	14.49	0
		8	4	14.80	14.69	14.44	0
		8	7	14.80	14.71	14.48	0
		15	0	14.84	14.72	14.45	0
	16QAM	1	0	14.62	14.49	13.88	0
		1	8	14.27	14.53	13.92	0
		1	14	14.45	14.29	14.54	0
		8	0	14.83	14.69	14.48	0
		8	4	14.77	14.65	14.41	0
		8	7	14.83	14.59	14.45	0
		15	0	14.81	14.77	14.45	0
	64QAM	1	0	14.47	14.26	14.09	0
		1	8	14.49	14.39	14.06	0
		1	14	14.45	14.47	14.10	0
		8	0	14.33	14.20	14.00	0
		8	4	14.49	14.25	14.13	0
		8	7	14.42	14.34	14.13	0
		15	0	14.38	14.41	14.21	0

Band width	Modulation	RB Size	RB offset	Maximum Average Power			MPR
				131 979	132 322	132 665	
				1 710.7 MHz	1 745.0 MHz	1 779.3 MHz	
1.4 MHz	QPSK	1	0	14.65	14.68	14.61	0
		1	3	14.62	14.60	14.55	0
		1	5	14.67	14.62	14.49	0
		3	0	14.57	14.49	14.45	0
		3	1	14.57	14.50	14.41	0
		3	3	14.64	14.54	14.36	0
		6	0	14.64	14.56	14.47	0
	16QAM	1	0	14.64	14.65	14.51	0
		1	3	14.59	14.55	14.26	0
		1	5	14.58	14.65	14.36	0
		3	0	14.51	14.59	14.56	0
		3	1	14.60	14.52	14.67	0
		3	3	14.54	14.50	14.61	0
		6	0	14.62	14.56	14.38	0
	64QAM	1	0	14.42	14.36	14.00	0
		1	3	14.58	14.32	14.17	0
		1	5	14.38	14.34	14.16	0
		3	0	14.37	14.20	13.90	0
		3	1	14.52	14.25	14.06	0
		3	3	14.28	14.29	14.04	0
		6	0	14.34	14.34	14.09	0

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (88) of (338)



9.10 WLAN Average Conducted Output Power(Maximum Average Power)

9.10.1 WLAN Average Conducted Output Power_Ant.1

Band	Freq. [MHz]	Channel	Mode			
			802.11b	802.11g	802.11n	802.11ac
WLAN 2.4 GHz	2 412.0	1	17.95	13.72	13.99	14.00
	2 437.0	6	17.94	14.40	14.36	14.46
	2 462.0	11	17.25	13.67	14.19	14.27
	2 467.0	12	5.15	5.10	5.51	5.60
	2 472.0	13	-2.79	-2.95	-3.08	-3.00
Band	Freq. [MHz]	Channel	Mode			
			802.11a	802.11n	802.11ac	
WLAN 5 GHz (20 MHz)	5 180.0	36	14.48	14.65	14.58	
	5 200.0	40	14.73	14.62	14.55	
	5 220.0	44	14.14	14.14	14.27	
	5 240.0	48	14.84	14.74	14.74	
	5 260.0	52	14.95	14.91	14.78	
	5 280.0	56	14.78	14.80	14.75	
	5 300.0	60	14.28	14.27	14.31	
	5 320.0	64	14.40	14.47	14.43	
	5 500.0	100	14.26	14.35	14.47	
	5 580.0	116	14.36	14.53	14.38	
	5 600.0	120	13.80	13.58	13.69	
	5 620.0	124	13.82	13.61	13.64	
	5 700.0	140	14.37	14.16	14.35	
	5 720.0	144	14.30	14.12	14.29	
	5 745.0	149	14.32	14.24	14.24	
5 785.0	157	14.59	14.51	14.34		
5 825.0	165	14.57	14.65	14.78		
Band	Freq. [MHz]	Channel	Mode			
			802.11n	802.11ac		
WLAN 5 GHz (40 MHz)	5 190.0	38	13.61	13.68		
	5 230.0	46	13.87	13.84		
	5 270.0	54	13.89	13.94		
	5 310.0	62	13.76	13.83		
	5 510.0	102	13.61	13.39		
	5 590.0	118	13.46	13.47		
	5 630.0	126	12.53	12.91		
	5 670.0	134	13.22	13.18		
	5 710.0	142	13.15	13.13		
	5 755.0	151	13.70	13.75		
5 795.0	159	13.96	13.70			
Band	Freq. [MHz]	Channel	Mode			
			802.11ac			
WLAN 5 GHz (80 MHz)	5 210.0	42	12.78			
	5 290.0	58	12.69			
	5 530.0	106	12.32			
	5 610.0	122	12.23			
	5 690.0	138	12.22			
5 775.0	155	12.62				

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (89) of (338)



9.10.2 WLAN Average Conducted Output Power_Ant.2

Band	Freq. [MHz]	Channel	Mode			
			802.11b	802.11g	802.11n	802.11ac
WLAN 2.4 GHz	2 412.0	1	17.95	14.43	13.98	14.02
	2 437.0	6	17.42	14.79	13.64	13.66
	2 462.0	11	17.79	14.08	13.74	13.73
	2 467.0	12	5.16	5.57	5.28	5.54
	2 472.0	13	-2.95	-2.26	-2.59	-2.72
Band	Freq. [MHz]	Channel	Mode			
			802.11a	802.11n	802.11ac	
WLAN 5 GHz (20 MHz)	5 180.0	36	14.11	14.08	14.06	
	5 200.0	40	14.15	14.13	14.28	
	5 220.0	44	13.77	13.84	13.84	
	5 240.0	48	14.22	14.41	14.41	
	5 260.0	52	14.31	14.30	14.34	
	5 280.0	56	14.22	14.32	14.24	
	5 300.0	60	13.73	13.82	13.79	
	5 320.0	64	13.78	13.97	13.93	
	5 500.0	100	14.44	14.53	14.40	
	5 580.0	116	14.34	14.58	14.53	
	5 600.0	120	13.87	13.85	13.92	
	5 620.0	124	13.95	13.75	13.86	
	5 700.0	140	14.41	14.32	14.42	
	5 720.0	144	14.30	14.28	14.36	
	5 745.0	149	14.49	14.44	14.49	
5 785.0	157	14.76	14.80	14.84		
5 825.0	165	14.76	14.76	14.73		
Band	Freq. [MHz]	Channel	Mode			
			802.11n	802.11ac		
WLAN 5 GHz (40 MHz)	5 190.0	38	13.04	13.01		
	5 230.0	46	13.26	13.32		
	5 270.0	54	13.25	13.40		
	5 310.0	62	13.24	13.24		
	5 510.0	102	13.75	13.69		
	5 590.0	118	13.54	13.59		
	5 630.0	126	13.02	13.13		
	5 670.0	134	13.37	13.55		
	5 710.0	142	13.41	13.44		
	5 755.0	151	13.77	13.93		
5 795.0	159	13.91	13.92			
Band	Freq. [MHz]	Channel	Mode			
			802.11ac			
WLAN 5 GHz (80 MHz)	5 210.0	42	12.04			
	5 290.0	58	12.09			
	5 530.0	106	12.39			
	5 610.0	122	12.21			
	5 690.0	138	12.15			
	5 775.0	155	12.60			

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (90) of (338)

**9.10.3 WLAN Average Conducted Output Power_MIMO**

Band	Freq. [MHz]	Channel	Mode			
			802.11b	802.11g	802.11n	802.11ac
WLAN 2.4 GHz	2 412.0	1	N/A	17.32	16.39	16.49
	2 437.0	6		17.84	16.26	16.26
	2 462.0	11		17.31	16.21	16.29
	2 467.0	12		8.07	8.16	8.33
	2 472.0	13		-0.27	-0.24	-0.21
Band	Freq. [MHz]	Channel	Mode			
WLAN 5 GHz (20 MHz)	5 180.0	36	802.11a	802.11n	802.11ac	
	5 200.0	40	16.75	16.82	17.00	
	5 220.0	44	16.95	16.78	17.09	
	5 240.0	48	17.13	17.11	17.33	
	5 260.0	52	17.16	17.15	17.30	
	5 280.0	56	16.94	17.05	17.47	
	5 300.0	60	17.06	17.03	17.52	
	5 320.0	64	16.96	16.93	17.49	
	5 320.0	64	16.73	16.64	17.05	
	5 500.0	100	16.90	16.98	17.33	
	5 580.0	116	16.98	17.04	17.34	
	5 600.0	120	16.73	16.69	17.47	
	5 620.0	124	16.64	16.62	17.09	
	5 700.0	140	16.77	16.91	17.21	
	5 720.0	144	16.72	16.84	17.17	
5 745.0	149	16.96	17.09	16.41		
5 785.0	157	17.20	17.22	16.70		
5 825.0	165	17.23	17.25	16.70		
Band	Freq. [MHz]	Channel	Mode			
WLAN 5 GHz (40 MHz)	5 190.0	38	802.11n	802.11ac		
	5 230.0	46	15.89	15.94		
	5 270.0	54	16.06	16.09		
	5 310.0	62	16.00	16.12		
	5 310.0	62	15.89	16.01		
	5 510.0	102	16.07	16.10		
	5 590.0	118	16.12	16.08		
	5 630.0	126	15.72	15.92		
	5 670.0	134	15.87	15.90		
	5 710.0	142	15.80	15.85		
5 755.0	151	16.18	16.26			
5 795.0	159	16.44	16.36			
Band	Freq. [MHz]	Channel	Mode			
WLAN 5 GHz (80 MHz)	5 210.0	42	802.11ac			
	5 290.0	58	14.84			
	5 530.0	106	15.04			
	5 610.0	122	15.04			
	5 690.0	138	14.77			
	5 775.0	155	14.78			
			15.17			

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (91) of (338)



9.11 WLAN Average Conducted Output Power (Reduced Average Power-RSDB)

9.11.1 WLAN Average Conducted Output Power_Ant.1

Band	Freq. [MHz]	Channel	Mode
			802.11b
WLAN 2.4 GHz	2 412.0	1	14.51
	2 437.0	6	14.02
	2 462.0	11	14.13

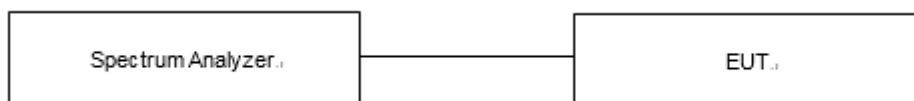
9.11.2 WLAN Average Conducted Output Power_Ant.2

Band	Freq. [MHz]	Channel	Mode
			802.11b
WLAN 2.4 GHz	2 412.0	1	13.88
	2 437.0	6	13.58
	2 462.0	11	13.75

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

- Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
- For transmission modes with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
- For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.
- For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, due to an even number of channels, both channels were measured.
- For additional RSDB scenario SAR Test, only the relevant mode was measured.

Power Measurement Setup



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (92) of (338)



9.12 Bluetooth Average Conducted Output Power(Maximum Average Power)

9.12.1 Bluetooth Average Conducted Output Power

Mode	Freq. [MHz]	Channel	Conducted Powers
			(dBm)
BDR_DH5 (1 Mbps)	2 402.0	0	11.57
	2 441.0	39	12.18
	2 480.0	78	11.50
EDR_2-DH5 (2 Mbps)	2 402.0	0	10.94
	2 441.0	39	11.76
	2 480.0	78	10.72
EDR_3-DH5 (3 Mbps)	2 402.0	0	10.95
	2 441.0	39	11.77
	2 480.0	78	10.73
LE (1 Mbps-37)	2 402.0	0	6.22
	2 440.0	19	7.17
	2 480.0	39	6.84
LE (1 Mbps-255)	2 402.0	0	6.19
	2 440.0	19	7.13
	2 480.0	39	6.78
LE (2 Mbps-37)	2 402.0	0	7.49
	2 440.0	19	7.89
	2 480.0	39	7.74
LE (2 Mbps-255)	2 402.0	0	7.39
	2 440.0	19	7.80
	2 480.0	39	7.65

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (93) of (338)



9.13 Wireless Band Duty Cycle

Wireless Bands	Frequency Bands	Mode	Ant.	Duty Cycle (%)		
GSM	850 1900	Voice, GPRS(GMSK), EGPRS(8PSK)		Voice: 12.5		
				(E)GPRS 1Tx : 12.5		
				(E)GPRS 2Tx : 25.0		
				(E)GPRS 3Tx : 37.5		
			(E)GPRS 4Tx : 50.0			
WCDMA	Band II	RMC, HSDPA, HSUPA, DC-HSDPA		100		
	Band IV					
	Band V					
LTE	FDD Band 2	QPSK, 16QAM, 64QAM		100		
	FDD Band 5					
	FDD Band 12					
	FDD Band 13					
	FDD Band 66					
	TDD Band 41			63.33		
WLAN	2.4 GHz	802.11b	Ant.1	98.60		
			Ant.2	99.00		
	5 GHz	802.11a	Ant.1	94.10		
			Ant.2	94.10		
Wireless Bands	Frequency Bands		Mode		Duty Cycle (%)	
	Mode	Packet	On Time (ms)	On-Off Time (ms)	Duty Cycle (%)	Duty Cycle Compensate Factor
Bluetooth	BDR(GFSK)	DH5	2.88	3.75	76.80	1.302

RBW 3 MHz Delta 3 [T1]
VBW 10 MHz -0.12 dB
Ref -30 dBm Att 10 dB SWT 10 ms 3.750000 ms
Marker 1 [T1] -42.45 dBm 1.150000 ms
Delta 2 [T1] -0.73 dB 2.880000 ms
Center 2.441 GHz 1 ms/

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (94) of (338)



10. System Verification

10.1 Tissue Verification

The dielectric properties for this Tissue Simulant Liquids were measured by using the SPEAG Model DAK3.5 Dielectric Probe in conjunction with Agilent E5071B Network Analyzer (300 kHz – 8 500 MHz). The Conductivity (σ) and Permittivity (ρ) are listed in Table 1. For the SAR measurement given in this report. The temperature variation of the Tissue Simulant Liquids was $(22 \pm 2) ^\circ\text{C}$.

Freq. (MHz)	Limit/Measured		Permittivity (ρ)	Conductivity (σ)	Temp. ($^\circ\text{C}$)
750.0	Recommended Limit		41.90 \pm 5 % (39.81 ~ 44.00)	0.89 \pm 5 % (0.85 ~ 0.93)	22 \pm 2
	Measured	2020-07-25	41.57	0.90	20.72
750.0	Recommended Limit		41.90 \pm 5 % (39.81 ~ 44.00)	0.89 \pm 5 % (0.85 ~ 0.93)	22 \pm 2
	Measured	2020-07-25	43.12	0.89	20.44
750.0	Recommended Limit		41.90 \pm 5 % (39.81 ~ 44.00)	0.89 \pm 5 % (0.85 ~ 0.93)	22 \pm 2
	Measured	2020-07-28	41.61	0.87	20.39
750.0	Recommended Limit		41.90 \pm 5 % (39.81 ~ 44.00)	0.89 \pm 5 % (0.85 ~ 0.93)	22 \pm 2
	Measured	2020-07-28	42.30	0.87	20.72
750.0	Recommended Limit		41.90 \pm 5 % (39.81 ~ 44.00)	0.89 \pm 5 % (0.85 ~ 0.93)	22 \pm 2
	Measured	2020-08-04	41.93	0.91	20.26
750.0	Recommended Limit		41.90 \pm 5 % (39.81 ~ 44.00)	0.89 \pm 5 % (0.85 ~ 0.93)	22 \pm 2
	Measured	2020-08-04	41.02	0.88	21.04
850.0	Recommended Limit		41.50 \pm 5 % (39.43 ~ 43.58)	0.92 \pm 5 % (0.87 ~ 0.97)	22 \pm 2
	Measured	2020-07-26	41.29	0.94	21.13
850.0	Recommended Limit		41.50 \pm 5 % (39.43 ~ 43.58)	0.92 \pm 5 % (0.87 ~ 0.97)	22 \pm 2
	Measured	2020-07-27	40.79	0.92	20.68
850.0	Recommended Limit		41.50 \pm 5 % (39.43 ~ 43.58)	0.92 \pm 5 % (0.87 ~ 0.97)	22 \pm 2
	Measured	2020-08-02	42.18	0.90	20.77
850.0	Recommended Limit		41.50 \pm 5 % (39.43 ~ 43.58)	0.92 \pm 5 % (0.87 ~ 0.97)	22 \pm 2
	Measured	2020-08-03	40.51	0.92	20.54
1 750.0	Recommended Limit		40.07 \pm 5 % (38.07 ~ 42.07)	1.37 \pm 5 % (1.30 ~ 1.44)	22 \pm 2
	Measured	2020-07-17	39.15	1.36	20.83
1 750.0	Recommended Limit		40.07 \pm 5 % (38.07 ~ 42.07)	1.37 \pm 5 % (1.30 ~ 1.44)	22 \pm 2
	Measured	2020-07-22	40.11	1.37	21.03
1 750.0	Recommended Limit		40.07 \pm 5 % (38.07 ~ 42.07)	1.37 \pm 5 % (1.30 ~ 1.44)	22 \pm 2
	Measured	2020-07-23	39.55	1.36	20.39

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (95) of (338)

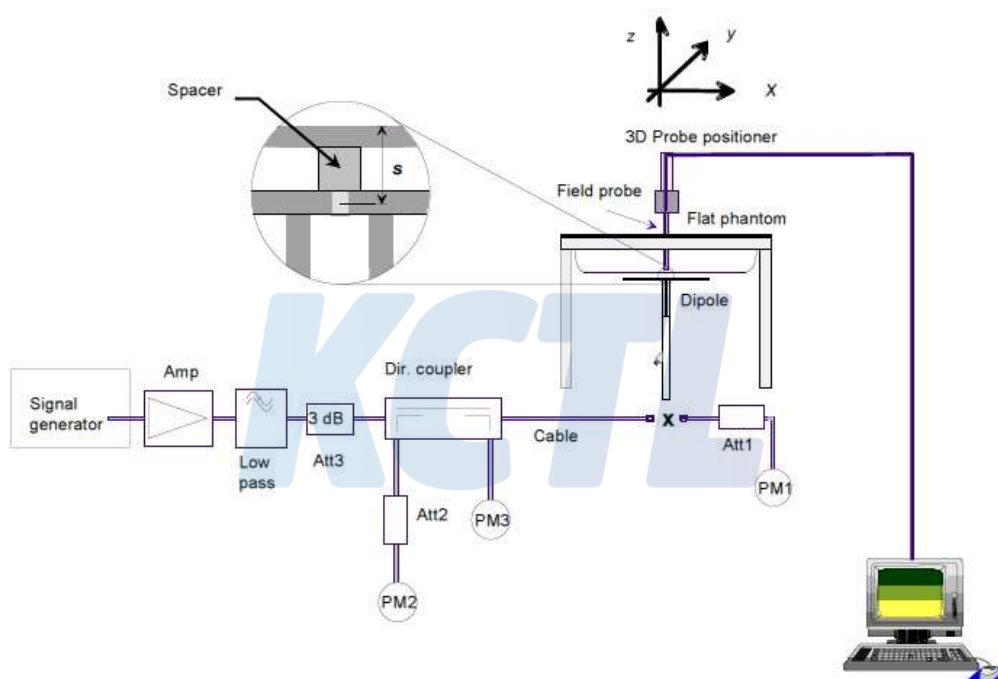


Freq. (MHz)	Limit/Measured		Permittivity (ρ)	Conductivity (σ)	Temp. (°C)
1 900.0	Recommended Limit		40.00 ± 5 % (38.00 ~ 42.00)	1.40 ± 5 % (1.33 ~ 1.47)	22 ± 2
	Measured	2020-07-16	38.90	1.41	20.45
1 900.0	Recommended Limit		40.00 ± 5 % (38.00 ~ 42.00)	1.40 ± 5 % (1.33 ~ 1.47)	22 ± 2
	Measured	2020-07-20	40.05	1.44	20.94
1 900.0	Recommended Limit		40.00 ± 5 % (38.00 ~ 42.00)	1.40 ± 5 % (1.33 ~ 1.47)	22 ± 2
	Measured	2020-07-21	39.83	1.42	20.39
1 900.0	Recommended Limit		40.00 ± 5 % (38.00 ~ 42.00)	1.40 ± 5 % (1.33 ~ 1.47)	22 ± 2
	Measured	2020-08-05	39.91	1.42	20.43
1 900.0	Recommended Limit		40.00 ± 5 % (38.00 ~ 42.00)	1.40 ± 5 % (1.33 ~ 1.47)	22 ± 2
	Measured	2020-08-12	39.42	1.41	20.41
2 450.0	Recommended Limit		39.20 ± 5 % (37.24 ~ 41.16)	1.80 ± 5 % (1.71 ~ 1.89)	22 ± 2
	Measured	2020-07-31	38.78	1.76	20.95
2 450.0	Recommended Limit		39.20 ± 5 % (37.24 ~ 41.16)	1.80 ± 5 % (1.71 ~ 1.89)	22 ± 2
	Measured	2020-08-01	39.78	1.77	20.81
2 450.0	Recommended Limit		39.20 ± 5 % (37.24 ~ 41.16)	1.80 ± 5 % (1.71 ~ 1.89)	22 ± 2
	Measured	2020-08-01	39.68	1.78	21.05
2 600.0	Recommended Limit		39.00 ± 5 % (37.05 ~ 40.95)	1.96 ± 5 % (1.86 ~ 2.06)	22 ± 2
	Measured	2020-07-21	38.33	1.97	20.98
2 600.0	Recommended Limit		39.00 ± 5 % (37.05 ~ 40.95)	1.96 ± 5 % (1.86 ~ 2.06)	22 ± 2
	Measured	2020-07-21	38.14	1.99	21.01
2 600.0	Recommended Limit		39.00 ± 5 % (37.05 ~ 40.95)	1.96 ± 5 % (1.86 ~ 2.06)	22 ± 2
	Measured	2020-07-30	38.35	1.92	20.47
5 300.0	Recommended Limit		35.90 ± 5 % (34.11 ~ 37.70)	4.76 ± 5 % (4.52 ~ 5.00)	22 ± 2
	Measured	2020-08-03	35.22	4.86	20.91
5 600.0	Recommended Limit		35.50 ± 5 % (33.73 ~ 37.28)	5.07 ± 5 % (4.82 ~ 5.32)	22 ± 2
	Measured	2020-08-04	35.04	5.18	20.59
5 600.0	Recommended Limit		35.50 ± 5 % (33.73 ~ 37.28)	5.07 ± 5 % (4.82 ~ 5.32)	22 ± 2
	Measured	2020-08-25	34.63	4.98	20.99
5 800.0	Recommended Limit		35.30 ± 5 % (33.54 ~ 37.07)	5.27 ± 5 % (5.01 ~ 5.53)	22 ± 2
	Measured	2020-08-05	34.29	5.36	21.03

<Table 1. Measurement result of Tissue electric parameters>

10.2 Test System Verification

The microwave circuit arrangement for system verification is sketched below picture. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within $\pm 10\%$ from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the Table 2. During the tests, the ambient temperature of the laboratory was in the range $(22 \pm 2) ^\circ\text{C}$, the relative humidity was in the range $(50 \pm 20)\%$ and the liquid depth Above the ear/grid reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (97) of (338)



Verification Kit	Probe S/N	Frequency (MHz)	Tissue Type	Limit/Measured (Normalized to 1 W)	
				Limit/Measured (Normalized)	Measured
D750V3 SN: 1183	EX3DV4 SN: 3865	750.0	HSL	Recommended Limit 1g (Normalized)	8.19 ± 10 % (7.37 ~ 9.01)
				Measured	2020-07-25 8.48
D750V3 SN: 1183	EX3DV4 SN: 3865	750.0	HSL	Recommended Limit 1g (Normalized)	8.19 ± 10 % (7.37 ~ 9.01)
				Measured	2020-07-25 8.16
D750V3 SN: 1183	EX3DV4 SN: 3865	750.0	HSL	Recommended Limit 1g (Normalized)	8.19 ± 10 % (7.37 ~ 9.01)
				Measured	2020-07-28 8.08
D750V3 SN: 1183	EX3DV4 SN: 3865	750.0	HSL	Recommended Limit 1g (Normalized)	8.19 ± 10 % (7.37 ~ 9.01)
				Measured	2020-07-28 8.24
D750V3 SN: 1183	EX3DV4 SN: 3865	750.0	HSL	Recommended Limit 1g (Normalized)	8.19 ± 10 % (7.37 ~ 9.01)
				Measured	2020-08-04 7.88
D750V3 SN: 1183	EX3DV4 SN: 3865	750.0	HSL	Recommended Limit 1g (Normalized)	8.19 ± 10 % (7.37 ~ 9.01)
				Measured	2020-08-04 8.12
D850V2 SN: 1006	EX3DV4 SN: 3865	850.0	HSL	Recommended Limit 1g (Normalized)	9.95 ± 10 % (8.96 ~ 10.95)
				Measured	2020-07-26 10.08
D850V2 SN: 1006	EX3DV4 SN: 3865	850.0	HSL	Recommended Limit 1g (Normalized)	9.95 ± 10 % (8.96 ~ 10.95)
				Measured	2020-07-27 9.72
D850V2 SN: 1006	EX3DV4 SN: 3865	850.0	HSL	Recommended Limit 1g (Normalized)	9.95 ± 10 % (8.96 ~ 10.95)
				Measured	2020-08-02 9.88
D850V2 SN: 1006	EX3DV4 SN: 3865	850.0	HSL	Recommended Limit 1g (Normalized)	9.95 ± 10 % (8.96 ~ 10.95)
				Measured	2020-08-03 10.36
D1750V2 SN: 1072	EX3DV4 SN: 3865	1 750.0	HSL	Recommended Limit 1g (Normalized)	36.50 ± 10 % (32.85 ~ 40.15)
				Measured	2020-07-17 36.40
D1750V2 SN: 1072	EX3DV4 SN: 3865	1 750.0	HSL	Recommended Limit 1g (Normalized)	36.50 ± 10 % (32.85 ~ 40.15)
				Measured	2020-07-22 36.76
D1750V2 SN: 1072	EX3DV4 SN: 3865	1 750.0	HSL	Recommended Limit 1g (Normalized)	36.50 ± 10 % (32.85 ~ 40.15)
				Measured	2020-07-23 35.96

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (98) of (338)



Verification Kit	Probe S/N	Frequency (MHz)	Tissue Type	Limit/Measured (Normalized to 1 W)	
				Recommended Limit 1g (Normalized)	Measured
D1900V2 SN: 5d160	EX3DV4 SN: 3865	1 900.0	HSL	Recommended Limit 1g (Normalized)	39.40 ± 10 % (35.46 ~ 43.34)
				Measured	2020-07-16 40.40
D1900V2 SN: 5d160	EX3DV4 SN: 3865	1 900.0	HSL	Recommended Limit 1g (Normalized)	39.40 ± 10 % (35.46 ~ 43.34)
				Measured	2020-07-20 40.40
D1900V2 SN: 5d160	EX3DV4 SN: 3865	1 900.0	HSL	Recommended Limit 1g (Normalized)	39.40 ± 10 % (35.46 ~ 43.34)
				Measured	2020-07-21 37.84
D1900V2 SN: 5d160	EX3DV4 SN: 3865	1 900.0	HSL	Recommended Limit 1g (Normalized)	39.40 ± 10 % (35.46 ~ 43.34)
				Measured	2020-08-05 38.20
D1900V2 SN: 5d160	EX3DV4 SN: 3865	1 900.0	HSL	Recommended Limit 1g (Normalized)	39.40 ± 10 % (35.46 ~ 43.34)
				Measured	2020-08-12 39.44
D2450V2 SN: 892	EX3DV4 SN: 3928	2450.0	HSL	Recommended Limit 1g (Normalized)	52.60 ± 10 % (47.34 ~ 57.86)
				Measured	2020-07-31 50.20
D2450V2 SN: 892	EX3DV4 SN: 3928	2450.0	HSL	Recommended Limit 1g (Normalized)	52.60 ± 10 % (47.34 ~ 57.86)
				Measured	2020-08-01 51.50
D2450V2 SN: 892	EX3DV4 SN: 3928	2450.0	HSL	Recommended Limit 1g (Normalized)	52.60 ± 10 % (47.34 ~ 57.86)
				Measured	2020-08-01 52.80
D2600V2 SN: 1003	EX3DV4 SN: 3928	2600.0	HSL	Recommended Limit 1g (Normalized)	57.90 ± 10 % (52.11 ~ 63.69)
				Measured	2020-07-21 60.50
D2600V2 SN: 1003	EX3DV4 SN: 3928	2600.0	HSL	Recommended Limit 1g (Normalized)	57.90 ± 10 % (52.11 ~ 63.69)
				Measured	2020-07-21 59.50
D2600V2 SN: 1003	EX3DV4 SN: 3928	2600.0	HSL	Recommended Limit 1g (Normalized)	57.90 ± 10 % (52.11 ~ 63.69)
				Measured	2020-07-30 61.30
D5GHzV2 SN: 1134	EX3DV4 SN: 3928	5300.0	HSL	Recommended Limit 1g (Normalized)	82.30 ± 10 % (74.07 ~ 90.53)
				Measured	2020-08-03 81.70
D5GHzV2 SN: 1134	EX3DV4 SN: 3928	5600.0	HSL	Recommended Limit 1g (Normalized)	84.10 ± 10 % (75.69 ~ 92.51)
				Measured	2020-08-04 82.80
D5GHzV2 SN: 1134	EX3DV4 SN: 3928	5600.0	HSL	Recommended Limit 1g (Normalized)	84.10 ± 10 % (75.69 ~ 92.51)
				Measured	2020-08-25 85.10
D5GHzV2 SN: 1134	EX3DV4 SN: 3928	5800.0	HSL	Recommended Limit 1g (Normalized)	81.50 ± 10 % (73.35 ~ 89.65)
				Measured	2020-08-05 82.50

<Table 2. System Verification Result>

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (99) of (338)



11. SAR Test Results

11.1 Standalone Head Test Results

GSM 850									
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
Voice	Right Cheek	0	836.6	24.06	24.50	1.107	0.154	0.170	
	Right Tilt	0	836.6	24.06	24.50	1.107	0.121	0.134	
	Left Cheek	0	836.6	24.06	24.50	1.107	0.283	0.313	1
	Left Tilt	0	836.6	24.06	24.50	1.107	0.205	0.227	
	Protective Cover (with S-pen)								
	Left Cheek	0	836.6	24.06	24.50	1.107	0.236	0.261	
GPRS 1Tx	Right Cheek	0	836.6	24.08	24.50	1.102	0.148	0.163	
	Right Tilt	0	836.6	24.08	24.50	1.102	0.116	0.128	
	Left Cheek	0	836.6	24.08	24.50	1.102	0.279	0.307	
	Left Tilt	0	836.6	24.08	24.50	1.102	0.199	0.219	

GSM 1900									
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
Voice	Right Cheek	0	1 880.0	23.93	24.00	1.016	0.134	0.136	
	Right Tilt	0	1 880.0	23.93	24.00	1.016	0.118	0.120	
	Left Cheek	0	1 880.0	23.93	24.00	1.016	0.434	0.441	
	Left Tilt	0	1 880.0	23.93	24.00	1.016	0.359	0.365	
GPRS 2Tx	Right Cheek	0	1 880.0	21.75	22.00	1.059	0.138	0.146	
	Right Tilt	0	1 880.0	21.75	22.00	1.059	0.113	0.120	
	Left Cheek	0	1 880.0	21.75	22.00	1.059	0.442	0.468	2
	Left Tilt	0	1 880.0	21.75	22.00	1.059	0.334	0.354	
	Protective Cover (with S-pen)								
	Left Cheek	0	1 880.0	21.75	22.00	1.059	0.414	0.439	

WCDMA Band II									
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
RMC	Right Cheek	0	1 880.0	13.76	14.50	1.186	0.098	0.116	
	Right Tilt	0	1 880.0	13.76	14.50	1.186	0.087	0.103	
	Left Cheek	0	1 880.0	13.76	14.50	1.186	0.364	0.432	3
	Left Tilt	0	1 880.0	13.76	14.50	1.186	0.285	0.338	
	Protective Cover (with S-pen)								
	Left Cheek	0	1 880.0	13.76	14.50	1.186	0.293	0.347	

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (100) of (338)

**WCDMA Band IV**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.	
RMC	Right Cheek	0	1 732.4	14.88	15.50	1.153	0.105	0.121		
	Right Tilt	0	1 732.4	14.88	15.50	1.153	0.088	0.102		
	Left Cheek	0	1 732.4	14.88	15.50	1.153	0.294	0.339		
	Left Tilt	0	1 732.4	14.88	15.50	1.153	0.244	0.281		
	Protective Cover (with S-pen)									
	Left Cheek	0	1 732.4	14.88	15.50	1.153	0.309	0.356	4	

WCDMA Band V

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.	
RMC	Right Cheek	0	836.6	18.64	19.50	1.219	0.276	0.336		
	Right Tilt	0	836.6	18.64	19.50	1.219	0.222	0.271		
	Left Cheek	0	836.6	18.64	19.50	1.219	0.452	0.551	5	
	Left Tilt	0	836.6	18.64	19.50	1.219	0.317	0.386		
	Protective Cover (with S-pen)									
	Left Cheek	0	836.6	18.64	19.50	1.219	0.288	0.351		

LTE Band 2

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
QPSK 20M 1RB 49Offset	Right Cheek	0	1 900.0	14.24	14.50	1.062	0.109	0.116	
QPSK 20M 50RB 24Offset	Right Cheek	0	1 900.0	14.19	14.50	1.074	0.108	0.116	
QPSK 20M 1RB 49Offset	Right Tilt	0	1 900.0	14.24	14.50	1.062	0.099	0.105	
QPSK 20M 50RB 24Offset	Right Tilt	0	1 900.0	14.19	14.50	1.074	0.099	0.107	
QPSK 20M 1RB 49Offset	Left Cheek	0	1 900.0	14.24	14.50	1.062	0.419	0.445	
QPSK 20M 50RB 24Offset	Left Cheek	0	1 900.0	14.19	14.50	1.074	0.414	0.445	6
QPSK 20M 1RB 49Offset	Left Tilt	0	1 900.0	14.24	14.50	1.062	0.330	0.350	
QPSK 20M 50RB 24Offset	Left Tilt	0	1 900.0	14.19	14.50	1.074	0.332	0.357	
Protective Cover (with S-pen)									
QPSK 20M 50RB 24Offset	Left Cheek	0	1 900.0	14.19	14.50	1.074	0.339	0.364	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (101) of (338)

**LTE Band 5**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
QPSK 10M 1RB 49Offset	Right Cheek	0	836.5	19.04	19.50	1.112	0.310	0.345	
QPSK 10M 25RB 12Offset	Right Cheek	0	836.5	19.06	19.50	1.107	0.328	0.363	
QPSK 10M 1RB 49Offset	Right Tilt	0	836.5	19.04	19.50	1.112	0.256	0.285	
QPSK 10M 25RB 12Offset	Right Tilt	0	836.5	19.06	19.50	1.107	0.266	0.294	
QPSK 10M 1RB 49Offset	Left Cheek	0	836.5	19.04	19.50	1.112	0.482	0.536	
QPSK 10M 25RB 12Offset	Left Cheek	0	836.5	19.06	19.50	1.107	0.516	0.571	7
QPSK 10M 1RB 49Offset	Left Tilt	0	836.5	19.04	19.50	1.112	0.334	0.371	
QPSK 10M 25RB 12Offset	Left Tilt	0	836.5	19.06	19.50	1.107	0.353	0.391	
Protective Cover (with S-pen)									
QPSK 10M 25RB 12Offset	Left Cheek	0	836.5	19.06	19.50	1.107	0.325	0.360	

LTE Band 12

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
QPSK 10M 1RB 25Offset	Right Cheek	0	707.5	20.09	20.50	1.099	0.323	0.355	
QPSK 10M 25RB 12Offset	Right Cheek	0	707.5	20.11	20.50	1.094	0.324	0.354	
QPSK 10M 1RB 25Offset	Right Tilt	0	707.5	20.09	20.50	1.099	0.281	0.309	
QPSK 10M 25RB 12Offset	Right Tilt	0	707.5	20.11	20.50	1.094	0.251	0.275	
QPSK 10M 1RB 25Offset	Left Cheek	0	707.5	20.09	20.50	1.099	0.556	0.611	8
QPSK 10M 25RB 12Offset	Left Cheek	0	707.5	20.11	20.50	1.094	0.556	0.608	
QPSK 10M 1RB 25Offset	Left Tilt	0	707.5	20.09	20.50	1.099	0.448	0.492	
QPSK 10M 25RB 12Offset	Left Tilt	0	707.5	20.11	20.50	1.094	0.452	0.494	
Protective Cover (with S-pen)									
QPSK 10M 1RB 25Offset	Left Cheek	0	707.5	20.09	20.50	1.099	0.487	0.535	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
 Suwon-si, Gyeonggi-do, 16677, Korea
 TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
 KR20-SPF0035-B
 Page (102) of (338)

**LTE Band 13**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
QPSK 10M 1RB 0Offset	Right Cheek	0	782.0	20.07	21.00	1.239	0.303	0.375	
QPSK 10M 25RB 12Offset	Right Cheek	0	782.0	20.48	21.00	1.127	0.365	0.411	
QPSK 10M 1RB 0Offset	Right Tilt	0	782.0	20.07	21.00	1.239	0.262	0.325	
QPSK 10M 25RB 12Offset	Right Tilt	0	782.0	20.48	21.00	1.127	0.315	0.355	
QPSK 10M 1RB 0Offset	Left Cheek	0	782.0	20.07	21.00	1.239	0.566	0.701	
QPSK 10M 25RB 12Offset	Left Cheek	0	782.0	20.48	21.00	1.127	0.672	0.757	9
QPSK 10M 1RB 0Offset	Left Tilt	0	782.0	20.07	21.00	1.239	0.514	0.637	
QPSK 10M 25RB 12Offset	Left Tilt	0	782.0	20.48	21.00	1.127	0.542	0.611	
Protective Cover (with S-pen)									
QPSK 10M 25RB 12Offset	Left Cheek	0	782.0	20.48	21.00	1.127	0.661	0.745	



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (103) of (338)

**LTE Band 41**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
QPSK 20M 1RB 49Offset	Right Cheek	0	2 680.0	18.39	18.50	1.026	0.106	0.109	
QPSK 20M 50RB 24Offset	Right Cheek	0	2 680.0	18.38	18.50	1.028	0.101	0.104	
QPSK 20M 1RB 49Offset	Right Tilt	0	2 680.0	18.39	18.50	1.026	0.104	0.107	
QPSK 20M 50RB 24Offset	Right Tilt	0	2 680.0	18.38	18.50	1.028	0.102	0.105	
QPSK 20M 1RB 49Offset	Left Cheek	0	2 680.0	18.39	18.50	1.026	0.605	0.621	
QPSK 20M 1RB 99Offset	Left Cheek	0	2 506.0	18.26	18.50	1.057	0.722	0.763	
QPSK 20M 1RB 49Offset	Left Cheek	0	2 549.5	18.05	18.50	1.109	0.687	0.762	
QPSK 20M 1RB 99Offset	Left Cheek	0	2 593.0	17.80	18.50	1.175	0.652	0.766	
QPSK 20M 1RB 99Offset	Left Cheek	0	2 636.5	18.05	18.50	1.109	0.695	0.771	
QPSK 20M 50RB 24Offset	Left Cheek	0	2 680.0	18.38	18.50	1.028	0.605	0.622	
QPSK 20M 50RB 24Offset	Left Cheek	0	2 506.0	18.27	18.50	1.054	0.693	0.731	
QPSK 20M 50RB 24Offset	Left Cheek	0	2 549.5	18.02	18.50	1.117	0.683	0.763	
QPSK 20M 50RB 24Offset	Left Cheek	0	2 593.0	17.79	18.50	1.178	0.663	0.781	10
QPSK 20M 50RB 24Offset	Left Cheek	0	2 636.5	18.03	18.50	1.114	0.637	0.710	
QPSK 20M 100RB 0Offset	Left Cheek	0	2 680.0	18.33	18.50	1.040	0.550	0.572	
QPSK 20M 1RB 49Offset	Left Tilt	0	2 680.0	18.39	18.50	1.026	0.495	0.508	
QPSK 20M 50RB 24Offset	Left Tilt	0	2 680.0	18.38	18.50	1.028	0.495	0.509	
Protective Cover (with S-pen)									
QPSK 20M 50RB 24Offset	Left Cheek	0	2 593.0	17.79	18.50	1.178	0.527	0.621	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (104) of (338)

**LTE Band 66**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
QPSK 20M 1RB 0Offset	Right Cheek	0	1 720.0	14.39	15.00	1.151	0.105	0.121	
QPSK 20M 50RB 24Offset	Right Cheek	0	1 720.0	14.96	15.00	1.009	0.111	0.112	
QPSK 20M 1RB 0Offset	Right Tilt	0	1 720.0	14.39	15.00	1.151	0.087	0.100	
QPSK 20M 50RB 24Offset	Right Tilt	0	1 720.0	14.96	15.00	1.009	0.091	0.092	
QPSK 20M 1RB 0Offset	Left Cheek	0	1 720.0	14.39	15.00	1.151	0.288	0.331	
QPSK 20M 50RB 24Offset	Left Cheek	0	1 720.0	14.96	15.00	1.009	0.313	0.316	
QPSK 20M 1RB 0Offset	Left Tilt	0	1 720.0	14.39	15.00	1.151	0.233	0.268	
QPSK 20M 50RB 24Offset	Left Tilt	0	1 720.0	14.96	15.00	1.009	0.249	0.251	
Protective Cover (with S-pen)									
QPSK 20M 1RB 0Offset	Left Cheek	0	1 720.0	14.39	15.00	1.151	0.313	0.360	11

Bluetooth

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
BDR_DH5	Right Cheek	0	2 441.0	12.18	12.50	1.076	1.302	0.074	0.104	12
	Right Tilt	0	2 441.0	12.18	12.50	1.076	1.302	0.045	0.063	
	Left Cheek	0	2 441.0	12.18	12.50	1.076	1.302	0.023	0.032	
	Left Tilt	0	2 441.0	12.18	12.50	1.076	1.302	0.015	0.021	
Protective Cover (with S-pen)										
BDR_DH5	Right Cheek	0	2 441.0	12.18	12.50	1.076	1.302	0.072	0.101	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (105) of (338)



11.2 Standalone Body Test Results

GSM 850									
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
GPRS 1Tx	Grip Sensor off								
	Rear	19	836.6	33.61	34.50	1.227	0.428	0.525	13
	Left	0	836.6	33.61	34.50	1.227	0.142	0.174	
	Right	6	836.6	33.61	34.50	1.227	0.400	0.491	
	Top	14	836.6	33.61	34.50	1.227	0.238	0.292	
	Protective Cover (with S-pen)								
	Rear	19	836.6	33.61	34.50	1.227	0.339	0.416	
	Grip Sensor on								
	Rear	0	836.6	24.22	24.50	1.067	0.410	0.437	
	Right	0	836.6	24.22	24.50	1.067	0.164	0.175	
Top	0	836.6	24.22	24.50	1.067	0.077	0.082		

GSM 1900									
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
GPRS 2Tx	Grip Sensor off								
	Rear	19	1 880.0	28.66	29.50	1.213	0.237	0.288	
	Left	0	1 880.0	28.66	29.50	1.213	0.072	0.087	
	Right	6	1 880.0	28.66	29.50	1.213	0.162	0.197	
	Top	14	1 880.0	28.66	29.50	1.213	0.283	0.343	
	Grip Sensor on								
	Rear	0	1 880.0	19.31	19.50	1.045	0.403	0.421	14
	Right	0	1 880.0	19.31	19.50	1.045	0.038	0.039	
	Top	0	1 880.0	19.31	19.50	1.045	0.210	0.219	
	Protective Cover (with S-pen)								
Rear	0	1 880.0	19.31	19.50	1.045	0.383	0.400		

WCDMA Band II									
Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
RMC	Grip Sensor off								
	Rear	19	1 880.0	23.84	24.50	1.164	0.406	0.473	
	Left	0	1 880.0	23.84	24.50	1.164	0.126	0.147	
	Right	6	1 880.0	23.84	24.50	1.164	0.268	0.312	
	Top	14	1 880.0	23.84	24.50	1.164	0.524	0.610	15
	Grip Sensor on								
	Rear	0	1 880.0	14.00	14.50	1.122	0.467	0.524	
	Right	0	1 880.0	14.00	14.50	1.122	0.063	0.071	
	Top	0	1 880.0	14.00	14.50	1.122	0.321	0.360	
	Protective Cover (with S-pen)								
Top	14	1 880.0	23.84	24.50	1.164	0.279	0.325		

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (106) of (338)

**WCDMA Band IV**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
RMC	Grip Sensor off								
	Rear	19	1 732.4	24.00	24.50	1.122	0.306	0.343	
	Left	0	1 732.4	24.00	24.50	1.122	0.074	0.083	
	Right	6	1 732.4	24.00	24.50	1.122	0.231	0.259	
	Top	14	1 732.4	24.00	24.50	1.122	0.469	0.526	
	Grip Sensor on								
	Rear	0	1 732.4	15.06	15.50	1.107	0.527	0.583	16
	Right	0	1 732.4	15.06	15.50	1.107	0.057	0.063	
	Top	0	1 732.4	15.06	15.50	1.107	0.245	0.271	
	Protective Cover (with S-pen)								
Rear	0	1 732.4	15.06	15.50	1.107	0.470	0.520		

WCDMA Band V

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
RMC	Grip Sensor off								
	Rear	19	836.6	23.80	24.50	1.175	0.443	0.520	
	Left	0	836.6	23.80	24.50	1.175	0.134	0.157	
	Right	6	836.6	23.80	24.50	1.175	0.403	0.473	
	Top	14	836.6	23.80	24.50	1.175	0.233	0.274	
	Grip Sensor on								
	Rear	0	836.6	19.80	20.50	1.175	0.571	0.671	17
	Right	0	836.6	19.80	20.50	1.175	0.314	0.369	
	Top	0	836.6	19.80	20.50	1.175	0.151	0.177	
	Protective Cover (with S-pen)								
Rear	0	836.6	19.80	20.50	1.175	0.385	0.452		

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
 Suwon-si, Gyeonggi-do, 16677, Korea
 TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
 KR20-SPF0035-B
 Page (107) of (338)

**LTE Band 2**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
Grip Sensor off									
QPSK 20M 1RB 49Offset	Rear	19	1 900.0	23.82	24.50	1.169	0.379	0.443	
QPSK 20M 50RB 24Offset	Rear	19	1 900.0	22.95	23.50	1.135	0.335	0.380	
QPSK 20M 1RB 49Offset	Left	0	1 900.0	23.82	24.50	1.169	0.138	0.161	
QPSK 20M 1RB 49Offset	Right	6	1 900.0	23.82	24.50	1.169	0.239	0.280	
QPSK 20M 50RB 24Offset	Right	6	1 900.0	22.95	23.50	1.135	0.211	0.239	
QPSK 20M 1RB 49Offset	Top	14	1 900.0	23.82	24.50	1.169	0.584	0.683	18
QPSK 20M 50RB 24Offset	Top	14	1 900.0	22.95	23.50	1.135	0.459	0.521	
Protective Cover (with S-pen)									
QPSK 20M 1RB 49Offset	Top	14	1 900.0	23.82	24.50	1.169	0.252	0.295	
Grip Sensor on									
QPSK 20M 1RB 49Offset	Rear	0	1 900.0	14.23	14.50	1.064	0.555	0.591	
QPSK 20M 50RB 24Offset	Rear	0	1 900.0	14.25	14.50	1.059	0.553	0.586	
QPSK 20M 1RB 49Offset	Right	0	1 900.0	14.23	14.50	1.064	0.063	0.067	
QPSK 20M 50RB 24Offset	Right	0	1 900.0	14.25	14.50	1.059	0.063	0.066	
QPSK 20M 1RB 49Offset	Top	0	1 900.0	14.23	14.50	1.064	0.343	0.365	
QPSK 20M 50RB 24Offset	Top	0	1 900.0	14.25	14.50	1.059	0.346	0.367	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
 Suwon-si, Gyeonggi-do, 16677, Korea
 TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
 KR20-SPF0035-B
 Page (108) of (338)

**LTE Band 5**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
Grip Sensor off									
QPSK 10M 1RB 25Offset	Rear	19	836.5	23.53	24.50	1.250	0.388	0.485	
QPSK 10M 25RB 12Offset	Rear	19	836.5	22.64	23.50	1.219	0.344	0.419	
QPSK 10M 1RB 25Offset	Left	0	836.5	23.53	24.50	1.250	0.115	0.144	
QPSK 10M 1RB 25Offset	Right	6	836.5	23.53	24.50	1.250	0.374	0.468	
QPSK 10M 25RB 12Offset	Right	6	836.5	22.64	23.50	1.219	0.300	0.366	
QPSK 10M 1RB 25Offset	Top	14	836.5	23.53	24.50	1.250	0.212	0.265	
QPSK 10M 25RB 12Offset	Top	14	836.5	22.64	23.50	1.219	0.188	0.229	
Grip Sensor on									
QPSK 10M 1RB 25Offset	Rear	0	836.5	18.91	19.50	1.146	0.528	0.605	
QPSK 10M 25RB 12Offset	Rear	0	836.5	18.91	19.50	1.146	0.532	0.609	19
QPSK 10M 1RB 25Offset	Right	0	836.5	18.91	19.50	1.146	0.278	0.318	
QPSK 10M 25RB 12Offset	Right	0	836.5	18.91	19.50	1.146	0.285	0.326	
QPSK 10M 1RB 25Offset	Top	0	836.5	18.91	19.50	1.146	0.139	0.159	
QPSK 10M 25RB 12Offset	Top	0	836.5	18.91	19.50	1.146	0.140	0.160	
Protective Cover (with S-pen)									
QPSK 10M 25RB 12Offset	Rear	0	836.5	18.91	19.50	1.146	0.354	0.406	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
 Suwon-si, Gyeonggi-do, 16677, Korea
 TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
 KR20-SPF0035-B
 Page (109) of (338)

**LTE Band 12**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
Grip Sensor off									
QPSK 10M 1RB 25Offset	Rear	19	707.5	23.45	24.50	1.274	0.177	0.225	
QPSK 10M 25RB 12Offset	Rear	19	707.5	22.78	23.50	1.180	0.142	0.168	
QPSK 10M 1RB 25Offset	Left	0	707.5	23.45	24.50	1.274	0.065	0.083	
QPSK 10M 1RB 25Offset	Right	6	707.5	23.45	24.50	1.274	0.141	0.180	
QPSK 10M 25RB 12Offset	Right	6	707.5	22.78	23.50	1.180	0.113	0.133	
QPSK 10M 1RB 25Offset	Top	14	707.5	23.45	24.50	1.274	0.161	0.205	
QPSK 10M 25RB 12Offset	Top	14	707.5	22.78	23.50	1.180	0.140	0.165	
Grip Sensor on									
QPSK 10M 1RB 25Offset	Rear	0	707.5	16.94	17.50	1.138	0.432	0.491	20
QPSK 10M 25RB 12Offset	Rear	0	707.5	16.97	17.50	1.130	0.435	0.491	
QPSK 10M 1RB 25Offset	Right	0	707.5	16.94	17.50	1.138	0.137	0.156	
QPSK 10M 25RB 12Offset	Right	0	707.5	16.97	17.50	1.130	0.137	0.155	
QPSK 10M 1RB 25Offset	Top	0	707.5	16.94	17.50	1.138	0.174	0.198	
QPSK 10M 25RB 12Offset	Top	0	707.5	16.97	17.50	1.130	0.176	0.199	
Protective Cover (with S-pen)									
QPSK 10M 1RB 25Offset	Rear	0	707.5	16.94	17.50	1.138	0.271	0.308	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
 Suwon-si, Gyeonggi-do, 16677, Korea
 TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
 KR20-SPF0035-B
 Page (110) of (338)

**LTE Band 13**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
Grip Sensor off									
QPSK 10M 1RB 25Offset	Rear	19	782.0	23.35	24.50	1.303	0.252	0.328	
QPSK 10M 25RB 12Offset	Rear	19	782.0	22.65	23.50	1.216	0.222	0.270	
QPSK 10M 1RB 25Offset	Left	0	782.0	23.35	24.50	1.303	0.100	0.130	
QPSK 10M 1RB 25Offset	Right	6	782.0	23.35	24.50	1.303	0.182	0.237	
QPSK 10M 25RB 12Offset	Right	6	782.0	22.65	23.50	1.216	0.158	0.192	
QPSK 10M 1RB 25Offset	Top	14	782.0	23.35	24.50	1.303	0.208	0.271	
QPSK 10M 25RB 12Offset	Top	14	782.0	22.65	23.50	1.216	0.164	0.199	
Grip Sensor on									
QPSK 10M 1RB 25Offset	Rear	0	782.0	16.78	17.50	1.180	0.430	0.508	
QPSK 10M 25RB 12Offset	Rear	0	782.0	16.81	17.50	1.172	0.433	0.508	21
QPSK 10M 1RB 25Offset	Right	0	782.0	16.78	17.50	1.180	0.177	0.209	
QPSK 10M 25RB 12Offset	Right	0	782.0	16.81	17.50	1.172	0.176	0.206	
QPSK 10M 1RB 25Offset	Top	0	782.0	16.78	17.50	1.180	0.128	0.151	
QPSK 10M 25RB 12Offset	Top	0	782.0	16.81	17.50	1.172	0.128	0.150	
Protective Cover (with S-pen)									
QPSK 10M 25RB 12Offset	Rear	0	782.0	16.81	17.50	1.172	0.277	0.325	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
 Suwon-si, Gyeonggi-do, 16677, Korea
 TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
 KR20-SPF0035-B
 Page (111) of (338)

**LTE Band 41**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
Grip Sensor off									
QPSK 20M 1RB 49Offset	Rear	19	2 506.0	24.03	24.50	1.114	0.425	0.474	
QPSK 20M 50RB 24Offset	Rear	19	2 506.0	23.17	23.50	1.079	0.337	0.364	
QPSK 20M 1RB 49Offset	Left	0	2 506.0	24.03	24.50	1.114	0.028	0.031	
QPSK 20M 1RB 49Offset	Right	6	2 506.0	24.03	24.50	1.114	0.392	0.437	
QPSK 20M 50RB 24Offset	Right	6	2 506.0	23.17	23.50	1.079	0.308	0.332	
QPSK 20M 1RB 49Offset	Top	14	2 506.0	24.03	24.50	1.114	0.448	0.499	
QPSK 20M 50RB 24Offset	Top	14	2 506.0	23.17	23.50	1.079	0.394	0.425	
Grip Sensor on									
QPSK 20M 1RB 99Offset	Rear	0	2 506.0	14.25	14.50	1.059	0.486	0.515	22
QPSK 20M 50RB 24Offset	Rear	0	2 506.0	14.21	14.50	1.069	0.472	0.505	
QPSK 20M 1RB 99Offset	Right	0	2 506.0	14.25	14.50	1.059	0.100	0.106	
QPSK 20M 50RB 24Offset	Right	0	2 506.0	14.21	14.50	1.069	0.098	0.105	
QPSK 20M 1RB 99Offset	Top	0	2 506.0	14.25	14.50	1.059	0.270	0.286	
QPSK 20M 50RB 24Offset	Top	0	2 506.0	14.21	14.50	1.069	0.257	0.275	
Protective Cover (with S-pen)									
QPSK 20M 1RB 99Offset	Rear	0	2 506.0	14.25	14.50	1.059	0.451	0.478	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (112) of (338)

**LTE Band 66**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
Grip Sensor off									
QPSK 20M 1RB 99Offset	Rear	19	1 720.0	24.14	25.00	1.219	0.260	0.317	
QPSK 20M 50RB 24Offset	Rear	19	1 720.0	23.26	24.00	1.186	0.230	0.273	
QPSK 20M 1RB 99Offset	Left	0	1 720.0	24.14	25.00	1.219	0.062	0.075	
QPSK 20M 1RB 99Offset	Right	6	1 720.0	24.14	25.00	1.219	0.197	0.240	
QPSK 20M 50RB 24Offset	Right	6	1 720.0	23.26	24.00	1.186	0.154	0.183	
QPSK 20M 1RB 99Offset	Top	14	1 720.0	24.14	25.00	1.219	0.372	0.453	
QPSK 20M 50RB 24Offset	Top	14	1 720.0	23.26	24.00	1.186	0.348	0.413	
Grip Sensor on									
QPSK 20M 1RB 49Offset	Rear	0	1 720.0	14.81	15.00	1.045	0.541	0.565	23
QPSK 20M 50RB 24Offset	Rear	0	1 720.0	14.90	15.00	1.023	0.548	0.561	
QPSK 20M 1RB 49Offset	Right	0	1 720.0	14.81	15.00	1.045	0.058	0.061	
QPSK 20M 50RB 24Offset	Right	0	1 720.0	14.90	15.00	1.023	0.059	0.060	
QPSK 20M 1RB 49Offset	Top	0	1 720.0	14.81	15.00	1.045	0.258	0.270	
QPSK 20M 50RB 24Offset	Top	0	1 720.0	14.90	15.00	1.023	0.258	0.264	
Protective Cover (with S-pen)									
QPSK 20M 1RB 49Offset	Rear	0	1 720.0	14.81	15.00	1.045	0.503	0.525	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (113) of (338)

**WLAN 2.4 GHz Ant.1**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
802.11b	Grip Sensor off									
	Rear	12	2 412.0	17.95	19.00	1.274	1.014	0.169	0.218	
	Left	5	2 412.0	17.95	19.00	1.274	1.014	0.182	0.235	24
	Right	0	2 412.0	17.95	19.00	1.274	1.014	0.011	0.015	
	Top	0	2 412.0	17.95	19.00	1.274	1.014	0.082	0.106	
	Protective Cover (with S-pen)									
	Left	5	2 412.0	17.95	19.00	1.274	1.014	0.143	0.185	
Additional SAR Test (RSDB Scenario) ^{G.Note 8}										
802.11b	Rear	12	2 412.0	14.51	15.00	1.119	1.014	0.085	0.097	

WLAN 2.4 GHz Ant.2

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
802.11b	Grip Sensor off									
	Rear	12	2 412.0	17.95	19.00	1.274	1.010	0.306	0.394	25
	Left	0	2 412.0	17.95	19.00	1.274	1.010	0.258	0.332	
	Right	0	2 412.0	17.95	19.00	1.274	1.010	0.063	0.081	
	Top	7	2 412.0	17.95	19.00	1.274	1.010	0.141	0.181	
	Protective Cover (with S-pen)									
	Rear	12	2 412.0	17.95	19.00	1.274	1.010	0.200	0.257	
Additional SAR Test (RSDB Scenario) ^{G.Note 8}										
802.11b	Rear	12	2 412.0	13.88	15.00	1.294	1.010	0.117	0.153	

U-NII-2A Ant.1

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
802.11a	Grip Sensor off									
	Rear	12	5 260.0	14.95	15.00	1.012	1.063	0.463	0.498	26
	Left	5	5 260.0	14.95	15.00	1.012	1.063	0.192	0.206	
	Right	0	5 260.0	14.95	15.00	1.012	1.063	0.000	0.000	
	Protective Cover (with S-pen)									
	Rear	12	5 260.0	14.95	15.00	1.012	1.063	0.385	0.414	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (114) of (338)

**U-NII-2A Ant.2**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
802.11a	Grip Sensor off									
	Rear	12	5 260.0	14.31	15.00	1.172	1.063	0.085	0.106	
	Right	0	5 260.0	14.31	15.00	1.172	1.063	0.000	0.000	
	Top	7	5 260.0	14.31	15.00	1.172	1.063	0.163	0.203	27
	Protective Cover (with S-pen)									
	Top	7	5 260.0	14.31	15.00	1.172	1.063	0.043	0.053	

U-NII-2C Ant.1

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
802.11a	Grip Sensor off									
	Rear	12	5 700.0	14.37	15.00	1.156	1.063	0.310	0.381	28
	Left	5	5 700.0	14.37	15.00	1.156	1.063	0.122	0.150	
	Right	0	5 700.0	14.37	15.00	1.156	1.063	0.000	0.000	
	Protective Cover (with S-pen)									
	Rear	12	5 700.0	14.37	15.00	1.156	1.063	0.210	0.258	

U-NII-2C Ant.2

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
802.11a	Grip Sensor off									
	Rear	12	5 500.0	14.44	15.00	1.138	1.063	0.104	0.126	
	Left	0	5 500.0	14.44	15.00	1.138	1.063	0.010	0.011	
	Right	0	5 500.0	14.44	15.00	1.138	1.063	0.000	0.000	
	Top	7	5 500.0	14.44	15.00	1.138	1.063	0.189	0.228	29
Protective Cover (with S-pen)										
	Top	7	5 500.0	14.44	15.00	1.138	1.063	0.025	0.030	

U-NII-3 Ant.1

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
802.11a	Grip Sensor off									
	Rear	12	5 785.0	14.59	15.00	1.099	1.063	0.267	0.312	30
	Left	5	5 785.0	14.59	15.00	1.099	1.063	0.088	0.103	
	Right	0	5 785.0	14.59	15.00	1.099	1.063	0.000	0.000	
	Protective Cover (with S-pen)									
	Rear	12	5 785.0	14.59	15.00	1.099	1.063	0.144	0.168	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (115) of (338)

**U-NII-3 Ant.2**

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
802.11a	Grip Sensor off									
	Rear	12	5 785.0	14.76	15.00	1.057	1.063	0.108	0.121	31
	Left	0	5 785.0	14.76	15.00	1.057	1.063	0.013	0.015	
	Right	0	5 785.0	14.76	15.00	1.057	1.063	0.000	0.000	
	Top	7	5 785.0	14.76	15.00	1.057	1.063	0.085	0.096	
	Protective Cover (with S-pen)									
	Rear	12	5 785.0	14.76	15.00	1.057	1.063	0.063	0.071	

Bluetooth

Mode	EUT Position	Distance (mm)	Frequency (MHz)	Measured Conducted Power (dBm)	Max. Tune-up Power (dBm)	Power Scaling Factor	Duty Cycle Compensate Factor	Measured 1 g SAR (W/kg)	Scaled 1 g SAR (W/kg)	Plot No.
BDR_DH5	Grip Sensor off									
	Rear	0	2 441.0	12.18	12.50	1.076	1.302	0.438	0.614	32
	Rear	12 ^{G.Note 8}	2 441.0	12.18	12.50	1.076	1.302	0.023	0.032	
	Left	0	2 441.0	12.18	12.50	1.076	1.302	0.070	0.098	
	Right	0	2 441.0	12.18	12.50	1.076	1.302	0.000	0.000	
	Protective Cover (with S-pen)									
	Rear	0	2 441.0	12.18	12.50	1.076	1.302	0.235	0.329	

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (116) of (338)



General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. All modes of operation were investigated, and worst-case results are reported.
3. Battery is fully charged for all readings and the standard batteries are the only options.
4. Liquid tissue depth was at least 15 cm.
5. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
6. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
7. This device utilizes power reduction for some wireless modes, as outlined in Section 2.3. The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous transmission scenarios.
8. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

GSM Notes:

1. Justification for reduced test configurations per KDB Publication 941225 D01v03r01 and October 2013 TCB Workshop Notes: The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.
2. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). Since the maximum output power variation across the required test channels is not $> \frac{1}{2}$ dB, the middle channel was used for testing.

WCDMA Notes:

1. UMTS mode in was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
2. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s).

LTE Notes:

1. Justification Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
2. When the reported SAR is > 0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
3. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg. Testing for the reAnt.1ing required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
4. Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
5. Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (117) of (338)



6. A-MPR was disabled for all SAR tests by setting NS=01 and MCC=001 on the base station simulator.
7. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
8. TDD LTE was tested using UL-DL configuration 0 with 6 UL sub frames and 2S sub-frames using extended cyclic prefix only and special sub frame configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Sec. 4, the duty factor using extended cyclic prefix is $0.633(cf=1.58)$.
9. For LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M and L channels may not fully apply.

WLAN & Bluetooth Notes:

1. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4GHz WIFI operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR.
2. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance.
3. When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n then ac) is selected.
4. When the specified maximum output power is the same for both UNII Band1 and UNII Band 2A, begins SAR measurement in UNII band 2A; and if the highest reported SAR for UNII band 2A is $\leq 1.2W/kg$, SAR is not required for UNII band1 $> 1.2W/kg$, both bands should be tested independently for SAR.
5. When the maximum reported 1g averaged SAR is $\leq 0.8 W/kg$, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was $\leq 1.20 W/kg$ for 1g evaluations or all test channels were measured.

12. Simultaneous Transmission

The following procedures adopted from FCC KDB Publication 447498 D01v06 are applicable to devices with built in unlicensed transmitters such as 802.11 and Bluetooth devices which may simultaneously transmit with the licensed transmitter.

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per FCC KDB Publication 447498 D01v06 4.3.2 and IEEE 1528-2013 Section 6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of the 1g or 10g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is within SAR limits. The different test positions in an exposure condition may be considered collectively to determine SAR test exclusion according to the sum of 1g or 10g SAR.

12.1 Estimated SAR

When standalone SAR is not required to be measured, per FCC KDB 447498 D01v06 4.3.2 b), the following equation must be used to estimate the standalone 1g SAR for simultaneous transmission assessment involving that transmitter.

- 1) For Test separation distances ≤ 50 mm

$$\text{Estimated SAR} = \frac{\sqrt{f(\text{GHz})}}{7.5} \times \frac{(\text{Max Power of channel, mW})}{\text{Min. Separation Distance, mm}}$$

- 2) When the minimum test separation distance is > 50 mm, the estimated SAR Value is 0.4 W/kg
- 3) For distances < 5 mm, a distance of 5mm is used to determine SAR exclusion and estimated SAR value.
- 4) Output power is the maximum rated power (including tune-up or manufacturing tolerances) and includes source-based averaging.

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (119) of (338)

**< Head Configuration – RCV+Proximity Sensor >**

Band / Ant.	Freq. [MHz]	Output Power		Separation distances [mm]	Estimated SAR Value [W/kg]
		dBm	mW	Head	Head
GSM850	848.8	24.50	282	5	Measure
GSM1900	1 909.8	21.50	141	5	Measure
WCDMA II	1 907.6	14.50	28	5	Measure
WCDMA IV	1 752.6	15.50	35	5	Measure
WCDMA V	846.6	20.50	112	5	Measure
LTE 2	1 909.3	14.50	28	5	Measure
LTE 5	848.3	19.50	89	5	Measure
LTE 12	715.3	17.50	56	5	Measure
LTE 13	784.5	17.50	56	5	Measure
LTE 41	2 687.5	14.50	28	5	Measure
LTE 66	1 779.3	15.00	32	5	Measure
2.4 GHz Ant.1	2 462.0	9.00	8	5	0.335
U-NII-2A Ant.1	5 320.0	3.90	2	5	0.123
U-NII-2C Ant.1	5 720.0	3.90	2	5	0.128
U-NII-3 Ant.1	5 825.0	3.90	2	5	0.129
2.4 GHz Ant.2	2 462.0	9.00	8	5	0.335
U-NII-2A Ant.2	5 320.0	3.90	2	5	0.123
U-NII-2C Ant.2	5 720.0	3.90	2	5	0.128
U-NII-3 Ant.2	5 825.0	3.90	2	5	0.129

< Head Configuration – RCV+Proximity Sensor + RSDB >

Band / Ant.	Freq. [MHz]	Output Power		Separation distances [mm]	Estimated SAR Value [W/kg]
		dBm	mW	Head	Head
2.4 GHz Ant.1	2 462.0	6.00	4	5	0.167
U-NII-2A Ant.1	5 320.0	2.00	2	5	0.123
U-NII-2C Ant.1	5 720.0	2.00	2	5	0.128
U-NII-3 Ant.1	5 825.0	2.00	2	5	0.129
2.4 GHz Ant.2	2 462.0	6.00	4	5	0.167
U-NII-2A Ant.2	5 320.0	2.00	2	5	0.123
U-NII-2C Ant.2	5 720.0	2.00	2	5	0.128
U-NII-3 Ant.2	5 825.0	2.00	2	5	0.129

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (120) of (338)

**< Body Configuration – Maximum Power >**

Band / Ant.	Freq. [MHz]	Output Power		Separation distances [mm]					Estimated SAR Value [W/kg]				
		dBm	mW	Rear	Left	Right	Top	Bot.	Rear	Left	Right	Top	Bottom
GSM850	848.8	34.50	2818	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
GSM1900	1 909.8	31.50	1413	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
WCDMA II	1 907.6	24.50	282	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
WCDMA IV	1 752.6	24.50	282	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
WCDMA V	846.6	24.50	282	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
LTE 2	1 909.3	24.50	282	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
LTE 5	848.3	24.50	282	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
LTE 12	715.3	24.50	282	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
LTE 13	784.5	24.50	282	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
LTE 41	2 687.5	24.50	282	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
LTE 66	1 779.3	25.00	316	5	87	5	5	192	Measure	Measure	Measure	Measure	EXEMPT
2.4 GHz Ant.1	2 462.0	19.00	79	5	5	113	26	162	Measure	Measure	Measure	Measure	EXEMPT
U-NII-2A Ant.1	5 320.0	15.00	32	5	5	113	26	162	Measure	Measure	Measure	0.379	EXEMPT
U-NII-2C Ant.1	5 720.0	15.00	32	5	5	113	26	162	Measure	Measure	Measure	0.392	EXEMPT
U-NII-3 Ant.1	5 825.0	15.00	32	5	5	113	26	162	Measure	Measure	Measure	0.396	EXEMPT
2.4 GHz Ant.2	2 462.0	19.00	79	5	25	89	5	198	Measure	Measure	Measure	Measure	EXEMPT
U-NII-2A Ant.2	5 320.0	15.00	32	5	25	89	5	198	Measure	0.394	Measure	Measure	EXEMPT
U-NII-2C Ant.2	5 720.0	15.00	32	5	25	89	5	198	Measure	Measure	Measure	Measure	EXEMPT
U-NII-3 Ant.2	5 825.0	15.00	32	5	25	89	5	198	Measure	Measure	Measure	Measure	EXEMPT
Bluetooth	2 480.0	12.50	18	5	5	113	26	161	Measure	Measure	Measure	0.145	EXEMPT

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (121) of (338)

**< Body Configuration – Grip Sensor On >**

Band / Ant.	Freq. [MHz]	Output Power		Separation distances [mm]					Estimated SAR Value [W/kg]				
		dBm	mW	Rear	Left	Right	Top	Bot.	Rear	Left	Right	Top	Bottom
GSM850	848.8	24.50	282	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
GSM1900	1 909.8	21.50	141	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
WCDMA II	1 907.6	14.50	28	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
WCDMA IV	1 752.6	15.50	35	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
WCDMA V	846.6	20.50	112	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 2	1 909.3	14.50	28	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 5	848.3	19.50	89	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 12	715.3	17.50	56	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 13	784.5	17.50	56	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 41	2 687.5	14.50	28	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 66	1 779.3	15.00	32	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
2.4 GHz Ant.1	2 462.0	9.00	8	5	5	113	26	162	0.335	0.335	N/A	N/A	N/A
U-NII-2A Ant.1	5 320.0	3.90	2	5	5	113	26	162	0.123	0.123	N/A	N/A	N/A
U-NII-2C Ant.1	5 720.0	3.90	2	5	5	113	26	162	0.128	0.128	N/A	N/A	N/A
U-NII-3 Ant.1	5 825.0	3.90	2	5	5	113	26	162	0.129	0.129	N/A	N/A	N/A
2.4 GHz Ant.2	2 462.0	9.00	8	5	25	89	5	198	0.335	N/A	N/A	0.335	N/A
U-NII-2A Ant.2	5 320.0	3.90	2	5	25	89	5	198	0.123	N/A	N/A	0.123	N/A
U-NII-2C Ant.2	5 720.0	3.90	2	5	25	89	5	198	0.128	N/A	N/A	0.128	N/A
U-NII-3 Ant.2	5 825.0	3.90	2	5	25	89	5	198	0.129	N/A	N/A	0.129	N/A

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (122) of (338)

**< Body Configuration – Grip Sensor On + RSDB >**

Band / Ant.	Freq. [MHz]	Output Power		Separation distances [mm]					Estimated SAR Value [W/kg]				
		dBm	mW	Rear	Left	Right	Top	Bot.	Rear	Left	Right	Top	Bottom
GSM850	848.8	24.50	282	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
GSM1900	1 909.8	21.50	141	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
WCDMA II	1 907.6	14.50	28	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
WCDMA IV	1 752.6	15.50	35	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
WCDMA V	846.6	20.50	112	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 2	1 909.3	14.50	28	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 5	848.3	19.50	89	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 12	715.3	17.50	56	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 13	784.5	17.50	56	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 41	2 687.5	14.50	28	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
LTE 66	1 779.3	15.00	32	5	86	5	5	192	Measure	N/A	Measure	Measure	N/A
2.4 GHz Ant.1	2 462.0	6.00	4	5	5	113	26	162	0.167	0.167	N/A	N/A	N/A
U-NII-2A Ant.1	5 320.0	2.00	2	5	5	113	26	162	0.123	0.123	N/A	N/A	N/A
U-NII-2C Ant.1	5 720.0	2.00	2	5	5	113	26	162	0.128	0.128	N/A	N/A	N/A
U-NII-3 Ant.1	5 825.0	2.00	2	5	5	113	26	162	0.129	0.129	N/A	N/A	N/A
2.4 GHz Ant.2	2 462.0	6.00	4	5	25	89	5	198	0.167	N/A	N/A	0.167	N/A
U-NII-2A Ant.2	5 320.0	2.00	2	5	25	89	5	198	0.123	N/A	N/A	0.123	N/A
U-NII-2C Ant.2	5 720.0	2.00	2	5	25	89	5	198	0.128	N/A	N/A	0.128	N/A
U-NII-3 Ant.2	5 825.0	2.00	2	5	25	89	5	198	0.129	N/A	N/A	0.129	N/A

12.2 #Simultaneous Transmission Configurations

According to FCC KDB 447498 D01v06, transmitters are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds.

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB Publication 447498 D01v06 4.3.2 procedures.

No.	Scenario	RF Exposure Condition	
		Head	Body
Non-RSDB			
1	Licensed + WLAN 2.4G Ant.1	Yes	Yes
2	Licensed + WLAN 2.4G Ant.2	Yes	Yes
3	Licensed + WLAN 5G Ant. 1	Yes	Yes
4	Licensed + WLAN 5G Ant.2	Yes	Yes
5	Licensed + Bluetooth	Yes	Yes
6	Licensed + WLAN 2.4G MIMO	Yes	Yes
7	Licensed + WLAN 5G MIMO	Yes	Yes
8	Licensed + Bluetooth + WLAN 5G Ant.1	Yes	Yes
9	Licensed + Bluetooth + WLAN 5G Ant.2	Yes	Yes
10	Licensed + Bluetooth + WLAN 5G MIMO	Yes	Yes
RSDB			
11	Licensed + WLAN 2.4G Ant.1 + WLAN 5G Ant.1	Yes	Yes
12	Licensed + WLAN 2.4G Ant.1 + WLAN 5G Ant.2	Yes	Yes
13	Licensed + WLAN 2.4G Ant.2 + WLAN5G Ant.1	Yes	Yes
14	Licensed + WLAN 2.4G Ant.2 + WLAN 5G Ant.2	Yes	Yes
15	Licensed + WLAN 2.4G Ant.1 + WLAN 5G MIMO	Yes	Yes
16	Licensed + WLAN 2.4G Ant.2 + WLAN 5G MIMO	Yes	Yes
17	Licensed + WLAN 2.4G MIMO + WLAN 5G Ant.1	Yes	Yes
18	Licensed + WLAN 2.4G MIMO + WLAN 5G Ant.2	Yes	Yes
19	Licensed + WLAN 2.4G MIMO + WLAN 5G MIMO	Yes	Yes

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (124) of (338)



12.2.1 Simultaneous Transmission Analysis

Head: RCV + Proximity Sensor On

Body: Sensor On

Exposure Condition /Position	licensed	WLAN				Bluetooth					
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1					
		[①]	[②]	[③]	[④]	[⑤]	[⑥]				
GSM/GPRS 850 Band											
Head	Right Cheek	0.170	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.134	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.313	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.227	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.437	0.335	0.335	0.129	0.129	0.614				
	Left	0.174	0.335	0.332	0.129	0.394	0.098				
	Right	0.175	0.015	0.081	0.000	0.000	0.000				
	Top	0.082	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[①]+[②]	[③]+[④]	[⑤]+[⑥]	[⑦]+[⑧]	[⑨]+[⑩]	[⑪]+[⑫]+[⑬]	[⑭]+[⑮]+[⑯]	[⑰]+[⑱]+[⑲]	[⑳]+[㉑]+[㉒]	[㉓]+[㉔]+[㉕]+[㉖]	
Head	Right Cheek	0.505	0.505	0.299	0.299	0.274	0.840	0.428	0.403	0.403	0.532
	Right Tilt	0.469	0.469	0.263	0.263	0.197	0.804	0.392	0.326	0.326	0.455
	Left Cheek	0.648	0.648	0.442	0.442	0.345	0.983	0.571	0.474	0.474	0.603
	Left Tilt	0.562	0.562	0.356	0.356	0.248	0.897	0.485	0.377	0.377	0.506
Body	Rear	0.772	0.772	0.566	0.566	1.051	1.107	0.695	1.180	1.180	1.309
	Left	0.509	0.506	0.303	0.568	0.272	0.841	0.697	0.401	0.666	0.795
	Right	0.190	0.256	0.175	0.175	0.175	0.271	0.175	0.175	0.175	0.175
	Top	0.188	0.417	0.478	0.211	0.227	0.523	0.607	0.623	0.356	0.752
GSM/GPRS 1900 Band											
Head	Right Cheek	0.146	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.120	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.468	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.354	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.421	0.335	0.335	0.129	0.129	0.614				
	Left	0.087	0.335	0.332	0.129	0.394	0.098				
	Right	0.039	0.015	0.081	0.000	0.000	0.000				
	Top	0.219	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[①]+[②]	[③]+[④]	[⑤]+[⑥]	[⑦]+[⑧]	[⑨]+[⑩]	[⑪]+[⑫]+[⑬]	[⑭]+[⑮]+[⑯]	[⑰]+[⑱]+[⑲]	[⑳]+[㉑]+[㉒]	[㉓]+[㉔]+[㉕]+[㉖]	
Head	Right Cheek	0.481	0.481	0.275	0.275	0.250	0.816	0.404	0.379	0.379	0.508
	Right Tilt	0.455	0.455	0.249	0.249	0.183	0.790	0.378	0.312	0.312	0.441
	Left Cheek	0.803	0.803	0.597	0.597	0.500	1.138	0.726	0.629	0.629	0.758
	Left Tilt	0.689	0.689	0.483	0.483	0.375	1.024	0.612	0.504	0.504	0.633
Body	Rear	0.756	0.756	0.550	0.550	1.035	1.091	0.679	1.164	1.164	1.293
	Left	0.422	0.419	0.216	0.481	0.185	0.754	0.610	0.314	0.579	0.708
	Right	0.054	0.120	0.039	0.039	0.039	0.135	0.039	0.039	0.039	0.039
	Top	0.325	0.554	0.615	0.348	0.364	0.660	0.744	0.760	0.493	0.889

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (125) of (338)



Exposure Condition /Position	licensed	WLAN				Bluetooth					
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1					
		[①]	[②]	[③]	[④]	[⑤]	[⑥]				
WCDMA Band II											
Head	Right Cheek	0.116	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.103	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.432	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.338	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.524	0.335	0.335	0.129	0.129	0.614				
	Left	0.147	0.335	0.332	0.129	0.394	0.098				
	Right	0.071	0.015	0.081	0.000	0.000	0.000				
	Top	0.360	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[①]+[②]	[③]+[④]	[⑤]+[⑥]	[⑦]+[⑧]	[⑨]+[⑩]	[⑪]+[⑫]+[⑬]	[⑭]+[⑮]+[⑯]	[⑰]+[⑱]+[⑲]	[⑳]+[㉑]+[㉒]	[㉓]+[㉔]+[㉕]+[㉖]	
Head	Right Cheek	0.451	0.451	0.245	0.245	0.220	0.786	0.374	0.349	0.349	0.478
	Right Tilt	0.438	0.438	0.232	0.232	0.166	0.773	0.361	0.295	0.295	0.424
	Left Cheek	0.767	0.767	0.561	0.561	0.464	1.102	0.690	0.593	0.593	0.722
	Left Tilt	0.673	0.673	0.467	0.467	0.359	1.008	0.596	0.488	0.488	0.617
Body	Rear	0.859	0.859	0.653	0.653	1.138	1.194	0.782	1.267	1.267	1.396
	Left	0.482	0.479	0.276	0.541	0.245	0.814	0.670	0.374	0.639	0.768
	Right	0.086	0.152	0.071	0.071	0.071	0.167	0.071	0.071	0.071	0.071
	Top	0.466	0.695	0.756	0.489	0.505	0.801	0.885	0.901	0.634	1.030
WCDMA Band IV											
Head	Right Cheek	0.121	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.102	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.356	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.281	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.583	0.335	0.335	0.129	0.129	0.614				
	Left	0.083	0.335	0.332	0.129	0.394	0.098				
	Right	0.063	0.015	0.081	0.000	0.000	0.000				
	Top	0.271	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[①]+[②]	[③]+[④]	[⑤]+[⑥]	[⑦]+[⑧]	[⑨]+[⑩]	[⑪]+[⑫]+[⑬]	[⑭]+[⑮]+[⑯]	[⑰]+[⑱]+[⑲]	[⑳]+[㉑]+[㉒]	[㉓]+[㉔]+[㉕]+[㉖]	
Head	Right Cheek	0.456	0.456	0.250	0.250	0.225	0.791	0.379	0.354	0.354	0.483
	Right Tilt	0.437	0.437	0.231	0.231	0.165	0.772	0.360	0.294	0.294	0.423
	Left Cheek	0.691	0.691	0.485	0.485	0.388	1.026	0.614	0.517	0.517	0.646
	Left Tilt	0.616	0.616	0.410	0.410	0.302	0.951	0.539	0.431	0.431	0.560
Body	Rear	0.918	0.918	0.712	0.712	1.197	1.253	0.841	1.326	1.326	1.455
	Left	0.418	0.415	0.212	0.477	0.181	0.750	0.606	0.310	0.575	0.704
	Right	0.078	0.144	0.063	0.063	0.063	0.159	0.063	0.063	0.063	0.063
	Top	0.377	0.606	0.667	0.400	0.416	0.712	0.796	0.812	0.545	0.941

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (126) of (338)



Exposure Condition /Position	licensed	WLAN				Bluetooth					
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1					
		[㉑]	[㉒]	[㉓]	[㉔]	[㉕]					
WCDMA Band V											
Head	Right Cheek	0.336	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.271	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.551	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.386	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.671	0.335	0.335	0.129	0.129	0.614				
	Left	0.157	0.335	0.332	0.129	0.394	0.098				
	Right	0.369	0.015	0.081	0.000	0.000	0.000				
	Top	0.177	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[㉑]+[㉒]	[㉑]+[㉓]	[㉑]+[㉔]	[㉑]+[㉕]	[㉑]+[㉖]	[㉑]+[㉗]+[㉘]	[㉑]+[㉙]+[㉚]	[㉑]+[㉛]+[㉜]	[㉑]+[㉝]+[㉞]	[㉑]+[㉟]+[㊱]+[㊲]	
Head	Right Cheek	0.671	0.671	0.465	0.465	0.440	1.006	0.594	0.569	0.569	0.698
	Right Tilt	0.606	0.606	0.400	0.400	0.334	0.941	0.529	0.463	0.463	0.592
	Left Cheek	0.886	0.886	0.680	0.680	0.583	1.221	0.809	0.712	0.712	0.841
	Left Tilt	0.721	0.721	0.515	0.515	0.407	1.056	0.644	0.536	0.536	0.665
Body	Rear	1.006	1.006	0.800	0.800	1.285	1.341	0.929	1.414	1.414	1.543
	Left	0.492	0.489	0.286	0.551	0.255	0.824	0.680	0.384	0.649	0.778
	Right	0.384	0.450	0.369	0.369	0.369	0.465	0.369	0.369	0.369	0.369
	Top	0.283	0.512	0.573	0.306	0.322	0.618	0.702	0.718	0.451	0.847
LTE Band 2											
Head	Right Cheek	0.116	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.107	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.445	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.357	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.591	0.335	0.335	0.129	0.129	0.614				
	Left	0.161	0.335	0.332	0.129	0.394	0.098				
	Right	0.067	0.015	0.081	0.000	0.000	0.000				
	Top	0.367	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[㉑]+[㉒]	[㉑]+[㉓]	[㉑]+[㉔]	[㉑]+[㉕]	[㉑]+[㉖]	[㉑]+[㉗]+[㉘]	[㉑]+[㉙]+[㉚]	[㉑]+[㉛]+[㉜]	[㉑]+[㉝]+[㉞]	[㉑]+[㉟]+[㊱]+[㊲]	
Head	Right Cheek	0.451	0.451	0.245	0.245	0.220	0.786	0.374	0.349	0.349	0.478
	Right Tilt	0.442	0.442	0.236	0.236	0.170	0.777	0.365	0.299	0.299	0.428
	Left Cheek	0.780	0.780	0.574	0.574	0.477	1.115	0.703	0.606	0.606	0.735
	Left Tilt	0.692	0.692	0.486	0.486	0.378	1.027	0.615	0.507	0.507	0.636
Body	Rear	0.926	0.926	0.720	0.720	1.205	1.261	0.849	1.334	1.334	1.463
	Left	0.496	0.493	0.290	0.555	0.259	0.828	0.684	0.388	0.653	0.782
	Right	0.082	0.148	0.067	0.067	0.067	0.163	0.067	0.067	0.067	0.067
	Top	0.473	0.702	0.763	0.496	0.512	0.808	0.892	0.908	0.641	1.037

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (127) of (338)



Exposure Condition /Position	licensed	WLAN				Bluetooth					
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1					
		[①]	[②]	[③]	[④]	[⑤]	[⑥]				
LTE Band 5											
Head	Right Cheek	0.363	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.294	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.571	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.391	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.609	0.335	0.335	0.129	0.129	0.614				
	Left	0.144	0.335	0.332	0.129	0.394	0.098				
	Right	0.326	0.015	0.081	0.000	0.000	0.000				
	Top	0.160	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[①]+[②]	[③]+[④]	[⑤]+[⑥]	[⑦]+[⑧]	[⑨]+[⑩]	[⑪]+[⑫]+[⑬]	[⑭]+[⑮]+[⑯]	[⑰]+[⑱]+[⑲]	[⑳]+[㉑]+[㉒]	[㉓]+[㉔]+[㉕]+[㉖]	
Head	Right Cheek	0.698	0.698	0.492	0.492	0.467	1.033	0.621	0.596	0.596	0.725
	Right Tilt	0.629	0.629	0.423	0.423	0.357	0.964	0.552	0.486	0.486	0.615
	Left Cheek	0.906	0.906	0.700	0.700	0.603	1.241	0.829	0.732	0.732	0.861
	Left Tilt	0.726	0.726	0.520	0.520	0.412	1.061	0.649	0.541	0.541	0.670
Body	Rear	0.944	0.944	0.738	0.738	1.223	1.279	0.867	1.352	1.352	1.481
	Left	0.479	0.476	0.273	0.538	0.242	0.811	0.667	0.371	0.636	0.765
	Right	0.341	0.407	0.326	0.326	0.326	0.422	0.326	0.326	0.326	0.326
	Top	0.266	0.495	0.556	0.289	0.305	0.601	0.685	0.701	0.434	0.830
LTE Band 12											
Head	Right Cheek	0.355	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.309	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.611	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.494	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.491	0.335	0.335	0.129	0.129	0.614				
	Left	0.083	0.335	0.332	0.129	0.394	0.098				
	Right	0.156	0.015	0.081	0.000	0.000	0.000				
	Top	0.199	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[①]+[②]	[③]+[④]	[⑤]+[⑥]	[⑦]+[⑧]	[⑨]+[⑩]	[⑪]+[⑫]+[⑬]	[⑭]+[⑮]+[⑯]	[⑰]+[⑱]+[⑲]	[⑳]+[㉑]+[㉒]	[㉓]+[㉔]+[㉕]+[㉖]	
Head	Right Cheek	0.690	0.690	0.484	0.484	0.459	1.025	0.613	0.588	0.588	0.717
	Right Tilt	0.644	0.644	0.438	0.438	0.372	0.979	0.567	0.501	0.501	0.630
	Left Cheek	0.946	0.946	0.740	0.740	0.643	1.281	0.869	0.772	0.772	0.901
	Left Tilt	0.829	0.829	0.623	0.623	0.515	1.164	0.752	0.644	0.644	0.773
Body	Rear	0.826	0.826	0.620	0.620	1.105	1.161	0.749	1.234	1.234	1.363
	Left	0.418	0.415	0.212	0.477	0.181	0.750	0.606	0.310	0.575	0.704
	Right	0.171	0.237	0.156	0.156	0.156	0.252	0.156	0.156	0.156	0.156
	Top	0.305	0.534	0.595	0.328	0.344	0.640	0.724	0.740	0.473	0.869

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (128) of (338)



Exposure Condition /Position	licensed	WLAN				Bluetooth					
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1					
		[①]	[②]	[③]	[④]	[⑤]	[⑥]				
LTE Band 13											
Head	Right Cheek	0.411	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.355	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.757	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.637	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.508	0.335	0.335	0.129	0.129	0.614				
	Left	0.130	0.335	0.332	0.129	0.394	0.098				
	Right	0.209	0.015	0.081	0.000	0.000	0.000				
	Top	0.151	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[①]+[②]	[③]+[④]	[⑤]+[⑥]	[⑦]+[⑧]	[⑨]+[⑩]	[⑪]+[⑫]+[⑬]	[⑭]+[⑮]+[⑯]	[⑰]+[⑱]+[⑲]	[⑳]+[㉑]+[㉒]	[㉓]+[㉔]+[㉕]+[㉖]	
Head	Right Cheek	0.746	0.746	0.540	0.540	0.515	1.081	0.669	0.644	0.644	0.773
	Right Tilt	0.690	0.690	0.484	0.484	0.418	1.025	0.613	0.547	0.547	0.676
	Left Cheek	1.092	1.092	0.886	0.886	0.789	1.427	1.015	0.918	0.918	1.047
	Left Tilt	0.972	0.972	0.766	0.766	0.658	1.307	0.895	0.787	0.787	0.916
Body	Rear	0.843	0.843	0.637	0.637	1.122	1.178	0.766	1.251	1.251	1.380
	Left	0.465	0.462	0.259	0.524	0.228	0.797	0.653	0.357	0.622	0.751
	Right	0.224	0.290	0.209	0.209	0.209	0.305	0.209	0.209	0.209	0.209
	Top	0.257	0.486	0.547	0.280	0.296	0.592	0.676	0.692	0.425	0.821
LTE Band 41											
Head	Right Cheek	0.109	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.107	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.781	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.509	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.515	0.335	0.335	0.129	0.129	0.614				
	Left	0.031	0.335	0.332	0.129	0.394	0.098				
	Right	0.106	0.015	0.081	0.000	0.000	0.000				
	Top	0.286	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[①]+[②]	[③]+[④]	[⑤]+[⑥]	[⑦]+[⑧]	[⑨]+[⑩]	[⑪]+[⑫]+[⑬]	[⑭]+[⑮]+[⑯]	[⑰]+[⑱]+[⑲]	[⑳]+[㉑]+[㉒]	[㉓]+[㉔]+[㉕]+[㉖]	
Head	Right Cheek	0.444	0.444	0.238	0.238	0.213	0.779	0.367	0.342	0.342	0.471
	Right Tilt	0.442	0.442	0.236	0.236	0.170	0.777	0.365	0.299	0.299	0.428
	Left Cheek	1.116	1.116	0.910	0.910	0.813	1.451	1.039	0.942	0.942	1.071
	Left Tilt	0.844	0.844	0.638	0.638	0.530	1.179	0.767	0.659	0.659	0.788
Body	Rear	0.850	0.850	0.644	0.644	1.129	1.185	0.773	1.258	1.258	1.387
	Left	0.366	0.363	0.160	0.425	0.129	0.698	0.554	0.258	0.523	0.652
	Right	0.121	0.187	0.106	0.106	0.106	0.202	0.106	0.106	0.106	0.106
	Top	0.392	0.621	0.682	0.415	0.431	0.727	0.811	0.827	0.560	0.956

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (129) of (338)



Exposure Condition /Position	licensed	WLAN				Bluetooth					
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1					
		[①]	[②]	[③]	[④]	[⑤]					
LTE Band 66											
Head	Right Cheek	0.121	0.335	0.335	0.129	0.129	0.104				
	Right Tilt	0.100	0.335	0.335	0.129	0.129	0.063				
	Left Cheek	0.360	0.335	0.335	0.129	0.129	0.032				
	Left Tilt	0.268	0.335	0.335	0.129	0.129	0.021				
Body	Rear	0.565	0.335	0.335	0.129	0.129	0.614				
	Left	0.075	0.335	0.332	0.129	0.394	0.098				
	Right	0.061	0.015	0.081	0.000	0.000	0.000				
	Top	0.270	0.106	0.335	0.396	0.129	0.145				
Summation											
-	[①]+[②]	[③]+[④]	[⑤]+[⑥]	[⑦]+[⑧]	[⑨]+[⑩]	[⑪]+[⑫]+[⑬]	[⑭]+[⑮]+[⑯]	[⑰]+[⑱]+[⑲]	[⑳]+[㉑]+[㉒]	[㉓]+[㉔]+[㉕]+[㉖]	
Head	Right Cheek	0.456	0.456	0.250	0.250	0.225	0.791	0.379	0.354	0.354	0.483
	Right Tilt	0.435	0.435	0.229	0.229	0.163	0.770	0.358	0.292	0.292	0.421
	Left Cheek	0.695	0.695	0.489	0.489	0.392	1.030	0.618	0.521	0.521	0.650
	Left Tilt	0.603	0.603	0.397	0.397	0.289	0.938	0.526	0.418	0.418	0.547
Body	Rear	0.900	0.900	0.694	0.694	1.179	1.235	0.823	1.308	1.308	1.437
	Left	0.410	0.407	0.204	0.469	0.173	0.742	0.598	0.302	0.567	0.696
	Right	0.076	0.142	0.061	0.061	0.061	0.157	0.061	0.061	0.061	0.061
	Top	0.376	0.605	0.666	0.399	0.415	0.711	0.795	0.811	0.544	0.940



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (130) of (338)



Head: RCV + Proximity Sensor On + RSDB

Body: Sensor On + RSDB

Exposure Condition /Position	licensed	WLAN				Bluetooth				
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1				
		[①]	[②]	[③]	[④]	[⑤]	[⑥]			
GSM/GPRS 850 Band										
Head	Right Cheek	0.170	0.167	0.167	0.129	0.129	0.104			
	Right Tilt	0.134	0.167	0.167	0.129	0.129	0.063			
	Left Cheek	0.313	0.167	0.167	0.129	0.129	0.032			
	Left Tilt	0.227	0.167	0.167	0.129	0.129	0.021			
Body	Rear	0.437	0.167	0.167	0.129	0.129	0.614			
	Left	0.174	0.167	0.332	0.129	0.394	0.098			
	Right	0.175	0.015	0.081	0.000	0.000	0.000			
	Top	0.082	0.106	0.167	0.396	0.129	0.145			
Summation										
-	[①]+[②]+[③]	[①]+[②]+[④]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[③]+[④]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]+[⑤]	
Head	Right Cheek	0.466	0.466	0.466	0.466	0.595	0.595	0.633	0.633	0.762
	Right Tilt	0.430	0.430	0.430	0.430	0.559	0.559	0.597	0.597	0.726
	Left Cheek	0.609	0.609	0.609	0.609	0.738	0.738	0.776	0.776	0.905
	Left Tilt	0.523	0.523	0.523	0.523	0.652	0.652	0.690	0.690	0.819
Body	Rear	0.733	0.733	0.733	0.733	0.862	0.862	0.900	0.900	1.029
	Left	0.470	0.735	0.635	0.900	0.864	1.029	0.802	1.067	1.196
	Right	0.190	0.190	0.256	0.256	0.190	0.256	0.271	0.271	0.271
	Top	0.584	0.317	0.645	0.378	0.713	0.774	0.751	0.484	0.880
GSM/GPRS 1900 Band										
Head	Right Cheek	0.146	0.167	0.167	0.167	0.129	0.129	0.129	0.129	0.104
	Right Tilt	0.120	0.167	0.167	0.167	0.129	0.129	0.129	0.129	0.063
	Left Cheek	0.468	0.167	0.167	0.167	0.129	0.129	0.129	0.129	0.032
	Left Tilt	0.354	0.167	0.167	0.167	0.129	0.129	0.129	0.129	0.021
Body	Rear	0.421	0.167	0.167	0.167	0.129	0.129	0.129	0.129	0.614
	Left	0.087	0.167	0.167	0.332	0.129	0.129	0.394	0.394	0.098
	Right	0.039	0.015	0.081	0.081	0.000	0.000	0.000	0.000	0.000
	Top	0.219	0.106	0.167	0.167	0.396	0.396	0.129	0.129	0.145
-	[①]+[②]+[③]	[①]+[②]+[④]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[③]+[④]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]+[⑤]	
Head	Right Cheek	0.442	0.442	0.442	0.442	0.571	0.571	0.609	0.609	0.738
	Right Tilt	0.416	0.416	0.416	0.416	0.545	0.545	0.583	0.583	0.712
	Left Cheek	0.764	0.764	0.764	0.764	0.893	0.893	0.931	0.931	1.060
	Left Tilt	0.650	0.650	0.650	0.650	0.779	0.779	0.817	0.817	0.946
Body	Rear	0.717	0.717	0.717	0.717	0.846	0.846	0.884	0.884	1.013
	Left	0.383	0.648	0.548	0.813	0.777	0.942	0.715	0.980	1.109
	Right	0.054	0.054	0.120	0.120	0.054	0.120	0.135	0.135	0.135
	Top	0.721	0.454	0.782	0.515	0.850	0.911	0.888	0.621	1.017

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (131) of (338)



Exposure Condition /Position	licensed	WLAN						Bluetooth	
		2.4 GHz Ant.1		2.4 GHz Ant.2		5 GHz Ant.1		5 GHz Ant.2	Ant.1
		[①]	[②]	[③]	[④]	[⑤]	[⑥]	[⑦]	
WCDMA Band II									
Head	Right Cheek	0.116	0.167	0.167	0.167	0.129	0.129	0.129	0.104
	Right Tilt	0.103	0.167	0.167	0.167	0.129	0.129	0.129	0.063
	Left Cheek	0.432	0.167	0.167	0.167	0.129	0.129	0.129	0.032
	Left Tilt	0.338	0.167	0.167	0.167	0.129	0.129	0.129	0.021
Body	Rear	0.524	0.167	0.167	0.167	0.129	0.129	0.129	0.614
	Left	0.147	0.167	0.332	0.332	0.129	0.394	0.394	0.098
	Right	0.071	0.015	0.081	0.081	0.000	0.000	0.000	0.000
	Top	0.360	0.106	0.167	0.167	0.396	0.129	0.129	0.145
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[⑤]	[①]+[②]+[③]+[④]+[⑤]
Head	Right Cheek	0.412	0.412	0.412	0.412	0.541	0.541	0.579	0.708
	Right Tilt	0.399	0.399	0.399	0.399	0.528	0.528	0.566	0.695
	Left Cheek	0.728	0.728	0.728	0.728	0.857	0.857	0.895	1.024
	Left Tilt	0.634	0.634	0.634	0.634	0.763	0.763	0.801	0.930
Body	Rear	0.820	0.820	0.820	0.820	0.949	0.949	0.987	1.116
	Left	0.443	0.708	0.608	0.873	0.837	1.002	0.775	1.169
	Right	0.086	0.086	0.152	0.152	0.086	0.152	0.167	0.167
	Top	0.862	0.595	0.923	0.656	0.991	1.052	1.029	0.762
WCDMA Band IV									
Head	Right Cheek	0.121	0.167	0.167	0.167	0.129	0.129	0.129	0.104
	Right Tilt	0.102	0.167	0.167	0.167	0.129	0.129	0.129	0.063
	Left Cheek	0.356	0.167	0.167	0.167	0.129	0.129	0.129	0.032
	Left Tilt	0.281	0.167	0.167	0.167	0.129	0.129	0.129	0.021
Body	Rear	0.583	0.167	0.167	0.167	0.129	0.129	0.129	0.614
	Left	0.083	0.167	0.332	0.332	0.129	0.394	0.394	0.098
	Right	0.063	0.015	0.081	0.081	0.000	0.000	0.000	0.000
	Top	0.271	0.106	0.167	0.167	0.396	0.129	0.129	0.145
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[⑤]	[①]+[②]+[③]+[④]+[⑤]
Head	Right Cheek	0.417	0.417	0.417	0.417	0.546	0.546	0.584	0.713
	Right Tilt	0.398	0.398	0.398	0.398	0.527	0.527	0.565	0.694
	Left Cheek	0.652	0.652	0.652	0.652	0.781	0.781	0.819	0.948
	Left Tilt	0.577	0.577	0.577	0.577	0.706	0.706	0.744	0.873
Body	Rear	0.879	0.879	0.879	0.879	1.008	1.008	1.046	1.175
	Left	0.379	0.644	0.544	0.809	0.773	0.938	0.711	1.105
	Right	0.078	0.078	0.144	0.144	0.078	0.144	0.159	0.159
	Top	0.773	0.506	0.834	0.567	0.902	0.963	0.940	0.673

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (132) of (338)



Exposure Condition /Position	licensed	WLAN					Bluetooth	
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1		
		[①]	[②]	[③]	[④]	[⑤]	[⑥]	
WCDMA Band V								
Head	Right Cheek	0.336	0.167	0.167	0.129	0.129	0.104	
	Right Tilt	0.271	0.167	0.167	0.129	0.129	0.063	
	Left Cheek	0.551	0.167	0.167	0.129	0.129	0.032	
	Left Tilt	0.386	0.167	0.167	0.129	0.129	0.021	
Body	Rear	0.671	0.167	0.167	0.129	0.129	0.614	
	Left	0.157	0.167	0.332	0.129	0.394	0.098	
	Right	0.369	0.015	0.081	0.000	0.000	0.000	
	Top	0.177	0.106	0.167	0.396	0.129	0.145	
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[④]+[⑤]
Head	Right Cheek	0.632	0.632	0.632	0.632	0.761	0.799	0.928
	Right Tilt	0.567	0.567	0.567	0.567	0.696	0.734	0.863
	Left Cheek	0.847	0.847	0.847	0.847	0.976	1.014	1.143
	Left Tilt	0.682	0.682	0.682	0.682	0.811	0.849	0.978
Body	Rear	0.967	0.967	0.967	0.967	1.096	1.134	1.263
	Left	0.453	0.718	0.618	0.883	0.847	1.012	1.050
	Right	0.384	0.384	0.450	0.450	0.384	0.465	0.465
	Top	0.679	0.412	0.740	0.473	0.808	0.869	0.846
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[④]+[⑤]
Head	Right Cheek	0.116	0.167	0.167	0.129	0.129	0.104	
	Right Tilt	0.107	0.167	0.167	0.129	0.129	0.063	
	Left Cheek	0.445	0.167	0.167	0.129	0.129	0.032	
	Left Tilt	0.357	0.167	0.167	0.129	0.129	0.021	
Body	Rear	0.591	0.167	0.167	0.129	0.129	0.614	
	Left	0.161	0.167	0.332	0.129	0.394	0.098	
	Right	0.067	0.015	0.081	0.000	0.000	0.000	
	Top	0.367	0.106	0.167	0.396	0.129	0.145	
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[④]+[⑤]
Head	Right Cheek	0.412	0.412	0.412	0.412	0.541	0.579	0.708
	Right Tilt	0.403	0.403	0.403	0.403	0.532	0.570	0.699
	Left Cheek	0.741	0.741	0.741	0.741	0.870	0.908	1.037
	Left Tilt	0.653	0.653	0.653	0.653	0.782	0.820	0.949
Body	Rear	0.887	0.887	0.887	0.887	1.016	1.054	1.183
	Left	0.457	0.722	0.622	0.887	0.851	1.016	1.054
	Right	0.082	0.082	0.148	0.148	0.082	0.163	0.163
	Top	0.869	0.602	0.930	0.663	0.998	1.059	1.036
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[④]+[⑤]

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (133) of (338)



Exposure Condition /Position	licensed	WLAN						Bluetooth		
		2.4 GHz Ant.1		2.4 GHz Ant.2		5 GHz Ant.1		5 GHz Ant.2	Ant.1	
		[①]	[②]	[③]	[④]	[⑤]	[⑥]	[⑦]		
LTE Band 5										
Head	Right Cheek	0.363	0.167	0.167	0.129	0.129	0.104			
	Right Tilt	0.294	0.167	0.167	0.129	0.129	0.063			
	Left Cheek	0.571	0.167	0.167	0.129	0.129	0.032			
	Left Tilt	0.391	0.167	0.167	0.129	0.129	0.021			
Body	Rear	0.609	0.167	0.167	0.129	0.129	0.614			
	Left	0.144	0.167	0.332	0.129	0.394	0.098			
	Right	0.326	0.015	0.081	0.000	0.000	0.000			
	Top	0.160	0.106	0.167	0.396	0.129	0.145			
-	[①]+[②]+[③]	[①]+[②]+[③]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[⑤]	[①]+[②]+[③]+[④]+[⑤]	
Head	Right Cheek	0.659	0.659	0.659	0.659	0.788	0.788	0.826	0.826	0.955
	Right Tilt	0.590	0.590	0.590	0.590	0.719	0.719	0.757	0.757	0.886
	Left Cheek	0.867	0.867	0.867	0.867	0.996	0.996	1.034	1.034	1.163
	Left Tilt	0.687	0.687	0.687	0.687	0.816	0.816	0.854	0.854	0.983
Body	Rear	0.905	0.905	0.905	0.905	1.034	1.034	1.072	1.072	1.201
	Left	0.440	0.705	0.605	0.870	0.834	0.999	0.772	1.037	1.166
	Right	0.341	0.341	0.407	0.407	0.341	0.407	0.422	0.422	0.422
	Top	0.662	0.395	0.723	0.456	0.791	0.852	0.829	0.562	0.958
LTE Band 12										
Head	Right Cheek	0.355	0.167	0.167	0.129	0.129	0.104			
	Right Tilt	0.309	0.167	0.167	0.129	0.129	0.063			
	Left Cheek	0.611	0.167	0.167	0.129	0.129	0.032			
	Left Tilt	0.494	0.167	0.167	0.129	0.129	0.021			
Body	Rear	0.491	0.167	0.167	0.129	0.129	0.614			
	Left	0.083	0.167	0.332	0.129	0.394	0.098			
	Right	0.156	0.015	0.081	0.000	0.000	0.000			
	Top	0.199	0.106	0.167	0.396	0.129	0.145			
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[⑤]	[①]+[②]+[③]+[④]+[⑤]	
Head	Right Cheek	0.651	0.651	0.651	0.651	0.780	0.780	0.818	0.818	0.947
	Right Tilt	0.605	0.605	0.605	0.605	0.734	0.734	0.772	0.772	0.901
	Left Cheek	0.907	0.907	0.907	0.907	1.036	1.036	1.074	1.074	1.203
	Left Tilt	0.790	0.790	0.790	0.790	0.919	0.919	0.957	0.957	1.086
Body	Rear	0.787	0.787	0.787	0.787	0.916	0.916	0.954	0.954	1.083
	Left	0.379	0.644	0.544	0.809	0.773	0.938	0.711	0.976	1.105
	Right	0.171	0.171	0.237	0.237	0.171	0.237	0.252	0.252	0.252
	Top	0.701	0.434	0.762	0.495	0.830	0.891	0.868	0.601	0.997

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (134) of (338)



Exposure Condition /Position	licensed	WLAN					Bluetooth			
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1				
		[①]	[②]	[③]	[④]	[⑤]	[⑥]			
LTE Band 13										
Head	Right Cheek	0.411	0.167	0.167	0.129	0.129	0.104			
	Right Tilt	0.355	0.167	0.167	0.129	0.129	0.063			
	Left Cheek	0.757	0.167	0.167	0.129	0.129	0.032			
	Left Tilt	0.637	0.167	0.167	0.129	0.129	0.021			
Body	Rear	0.508	0.167	0.167	0.129	0.129	0.614			
	Left	0.130	0.167	0.332	0.129	0.394	0.098			
	Right	0.209	0.015	0.081	0.000	0.000	0.000			
	Top	0.151	0.106	0.167	0.396	0.129	0.145			
-	[①]+[②]+[③]	[①]+[②]+[③]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[④]+[⑤]		
Head	Right Cheek	0.707	0.707	0.707	0.707	0.836	0.836	0.874	0.874	1.003
	Right Tilt	0.651	0.651	0.651	0.651	0.780	0.780	0.818	0.818	0.947
	Left Cheek	1.053	1.053	1.053	1.053	1.182	1.182	1.220	1.220	1.349
	Left Tilt	0.933	0.933	0.933	0.933	1.062	1.062	1.100	1.100	1.229
Body	Rear	0.804	0.804	0.804	0.804	0.933	0.933	0.971	0.971	1.100
	Left	0.426	0.691	0.591	0.856	0.820	0.985	0.758	1.023	1.152
	Right	0.224	0.224	0.290	0.290	0.224	0.290	0.305	0.305	0.305
	Top	0.653	0.386	0.714	0.447	0.782	0.843	0.820	0.553	0.949
LTE Band 41										
Head	Right Cheek	0.109	0.167	0.167	0.129	0.129	0.104			
	Right Tilt	0.107	0.167	0.167	0.129	0.129	0.063			
	Left Cheek	0.781	0.167	0.167	0.129	0.129	0.032			
	Left Tilt	0.509	0.167	0.167	0.129	0.129	0.021			
Body	Rear	0.515	0.167	0.167	0.129	0.129	0.614			
	Left	0.031	0.167	0.332	0.129	0.394	0.098			
	Right	0.106	0.015	0.081	0.000	0.000	0.000			
	Top	0.286	0.106	0.167	0.396	0.129	0.145			
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]	[①]+[②]+[③]+[④]+[⑤]		
Head	Right Cheek	0.405	0.405	0.405	0.405	0.534	0.534	0.572	0.572	0.701
	Right Tilt	0.403	0.403	0.403	0.403	0.532	0.532	0.570	0.570	0.699
	Left Cheek	1.077	1.077	1.077	1.077	1.206	1.206	1.244	1.244	1.373
	Left Tilt	0.805	0.805	0.805	0.805	0.934	0.934	0.972	0.972	1.101
Body	Rear	0.811	0.811	0.811	0.811	0.940	0.940	0.978	0.978	1.107
	Left	0.327	0.592	0.492	0.757	0.721	0.886	0.659	0.924	1.053
	Right	0.121	0.121	0.187	0.187	0.121	0.187	0.202	0.202	0.202
	Top	0.788	0.521	0.849	0.582	0.917	0.978	0.955	0.688	1.084

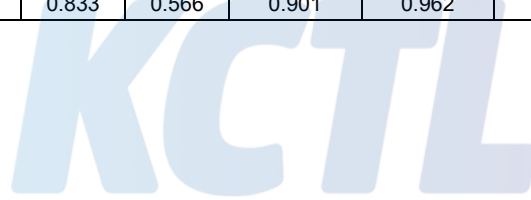
KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (135) of (338)



Exposure Condition /Position	licensed	WLAN				Bluetooth				
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1				
		[①]	[②]	[③]	[④]	[⑤]				
LTE Band 66										
Head	Right Cheek	0.121	0.167	0.167	0.129	0.129	0.104			
	Right Tilt	0.100	0.167	0.167	0.129	0.129	0.063			
	Left Cheek	0.360	0.167	0.167	0.129	0.129	0.032			
	Left Tilt	0.268	0.167	0.167	0.129	0.129	0.021			
Body	Rear	0.565	0.167	0.167	0.129	0.129	0.614			
	Left	0.075	0.167	0.332	0.129	0.394	0.098			
	Right	0.061	0.015	0.081	0.000	0.000	0.000			
	Top	0.270	0.106	0.167	0.396	0.129	0.145			
-	[①]H②H③	[①]H②H③	[①]H③H④	[①]H③H④	[①]H②H④H⑤	[①]H③H④H⑤	[①]H②H③H④	[①]H②H③H④	[①]H②H③H④H⑤	
Head	Right Cheek	0.417	0.417	0.417	0.417	0.546	0.546	0.584	0.584	0.713
	Right Tilt	0.396	0.396	0.396	0.396	0.525	0.525	0.563	0.563	0.692
	Left Cheek	0.656	0.656	0.656	0.656	0.785	0.785	0.823	0.823	0.952
	Left Tilt	0.564	0.564	0.564	0.564	0.693	0.693	0.731	0.731	0.860
Body	Rear	0.861	0.861	0.861	0.861	0.990	0.990	1.028	1.028	1.157
	Left	0.371	0.636	0.536	0.801	0.765	0.930	0.703	0.968	1.097
	Right	0.076	0.076	0.142	0.142	0.076	0.142	0.157	0.157	0.157
	Top	0.772	0.505	0.833	0.566	0.901	0.962	0.939	0.672	1.068



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (136) of (338)



Body: Sensor Off(Maximum Power)

Exposure Condition /Position	licensed	WLAN				Bluetooth					
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1					
		[①]	[②]	[③]	[④]	[⑤]	[⑥]				
GSM/GPRS 850 Band											
Body	Rear	0.525	0.218	0.394	0.498	0.126	0.032				
	Left	0.174	0.235	0.332	0.206	0.394	0.098				
	Right	0.491	0.015	0.081	0.000	0.000	0.000				
	Top	0.292	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑤]+[⑥]				
Body	Rear	0.743	0.919	1.023	0.651	0.557	1.137	1.149	1.055	0.683	1.181
	Left	0.409	0.506	0.380	0.568	0.272	0.741	0.774	0.478	0.666	0.872
	Right	0.506	0.572	0.491	0.491	0.491	0.587	0.491	0.491	0.491	0.491
	Top	0.398	0.473	0.688	0.520	0.437	0.579	0.916	0.833	0.665	1.061
GSM/GPRS 1900 Band											
Body	Rear	0.288	0.218	0.394	0.498	0.126	0.032				
	Left	0.087	0.235	0.332	0.206	0.394	0.098				
	Right	0.197	0.015	0.081	0.000	0.000	0.000				
	Top	0.343	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑤]+[⑥]				
Body	Rear	0.506	0.682	0.786	0.414	0.320	0.900	0.912	0.818	0.446	0.944
	Left	0.322	0.419	0.293	0.481	0.185	0.654	0.687	0.391	0.579	0.785
	Right	0.212	0.278	0.197	0.197	0.197	0.293	0.197	0.197	0.197	0.197
	Top	0.449	0.524	0.739	0.571	0.488	0.630	0.967	0.884	0.716	1.112
Exposure Condition /Position	licensed	WLAN				Bluetooth					
		2.4 GHz Ant.2	2.4 GHz MIMO	5 GHz Ant.1	5 GHz Ant.2	Ant.1					
		[①]	[②]	[③]	[④]	[⑤]	[⑥]				
WCDMA Band II											
Body	Rear	0.473	0.218	0.394	0.498	0.126	0.032				
	Left	0.147	0.235	0.332	0.206	0.394	0.098				
	Right	0.312	0.015	0.081	0.000	0.000	0.000				
	Top	0.610	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑤]+[⑥]				
Body	Rear	0.691	0.867	0.971	0.599	0.505	1.085	1.097	1.003	0.631	1.129
	Left	0.382	0.479	0.353	0.541	0.245	0.714	0.747	0.451	0.639	0.845
	Right	0.327	0.393	0.312	0.312	0.312	0.408	0.312	0.312	0.312	0.312
	Top	0.716	0.791	1.006	0.838	0.755	0.897	1.234	1.151	0.983	1.379

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (137) of (338)



Exposure Condition /Position	licensed	WLAN					Bluetooth				
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1					
		[①]	[②]	[③]	[④]	[⑤]	[⑥]				
WCDMA Band IV											
Body	Rear	0.343	0.218	0.394	0.498	0.126	0.032				
	Left	0.083	0.235	0.332	0.206	0.394	0.098				
	Right	0.259	0.015	0.081	0.000	0.000	0.000				
	Top	0.526	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[⑥]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑥]	[①]+[⑤]+[⑥]	[①]+[②]+[③]+[⑥]	
Body	Rear	0.561	0.737	0.841	0.469	0.375	0.955	0.967	0.873	0.501	0.999
	Left	0.318	0.415	0.289	0.477	0.181	0.650	0.683	0.387	0.575	0.781
	Right	0.274	0.340	0.259	0.259	0.259	0.355	0.259	0.259	0.259	0.259
	Top	0.632	0.707	0.922	0.754	0.671	0.813	1.150	1.067	0.899	1.295
WCDMA Band V											
Body	Rear	0.520	0.218	0.394	0.498	0.126	0.032				
	Left	0.157	0.235	0.332	0.206	0.394	0.098				
	Right	0.473	0.015	0.081	0.000	0.000	0.000				
	Top	0.274	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[⑥]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑥]	[①]+[⑤]+[⑥]	[①]+[②]+[③]+[⑥]	
Body	Rear	0.738	0.914	1.018	0.646	0.552	1.132	1.144	1.050	0.678	1.176
	Left	0.392	0.489	0.363	0.551	0.255	0.724	0.757	0.461	0.649	0.855
	Right	0.488	0.554	0.473	0.473	0.473	0.569	0.473	0.473	0.473	0.473
	Top	0.380	0.455	0.670	0.502	0.419	0.561	0.898	0.815	0.647	1.043
LTE Band 2											
Body	Rear	0.443	0.218	0.394	0.498	0.126	0.032				
	Left	0.161	0.235	0.332	0.206	0.394	0.098				
	Right	0.280	0.015	0.081	0.000	0.000	0.000				
	Top	0.683	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[⑥]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑥]	[①]+[⑤]+[⑥]	[①]+[②]+[③]+[⑥]	
Body	Rear	0.661	0.837	0.941	0.569	0.475	1.055	1.067	0.973	0.601	1.099
	Left	0.396	0.493	0.367	0.555	0.259	0.728	0.761	0.465	0.653	0.859
	Right	0.295	0.361	0.280	0.280	0.280	0.376	0.280	0.280	0.280	0.280
	Top	0.789	0.864	1.079	0.911	0.828	0.970	1.307	1.224	1.056	1.452
LTE Band 5											
Body	Rear	0.485	0.218	0.394	0.498	0.126	0.032				
	Left	0.144	0.235	0.332	0.206	0.394	0.098				
	Right	0.468	0.015	0.081	0.000	0.000	0.000				
	Top	0.265	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[⑥]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑥]	[①]+[⑤]+[⑥]	[①]+[②]+[③]+[⑥]	
Body	Rear	0.703	0.879	0.983	0.611	0.517	1.097	1.109	1.015	0.643	1.141
	Left	0.379	0.476	0.350	0.538	0.242	0.711	0.744	0.448	0.636	0.842
	Right	0.483	0.549	0.468	0.468	0.468	0.564	0.468	0.468	0.468	0.468
	Top	0.371	0.446	0.661	0.493	0.410	0.552	0.889	0.806	0.638	1.034

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (138) of (338)



Exposure Condition /Position	licensed	WLAN				Bluetooth					
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1					
		[①]	[②]	[③]	[④]	[⑤]	[⑥]				
LTE Band 12											
Body	Rear	0.225	0.218	0.394	0.498	0.126	0.032				
	Left	0.083	0.235	0.332	0.206	0.394	0.098				
	Right	0.180	0.015	0.081	0.000	0.000	0.000				
	Top	0.205	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[⑥]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑥]	[①]+[⑤]+[⑥]	[①]+[②]+[③]+[⑥]	
Body	Rear	0.443	0.619	0.723	0.351	0.257	0.837	0.849	0.755	0.383	0.881
	Left	0.318	0.415	0.289	0.477	0.181	0.650	0.683	0.387	0.575	0.781
	Right	0.195	0.261	0.180	0.180	0.180	0.276	0.180	0.180	0.180	0.180
	Top	0.311	0.386	0.601	0.433	0.350	0.492	0.829	0.746	0.578	0.974
LTE Band 13											
Body	Rear	0.328	0.218	0.394	0.498	0.126	0.032				
	Left	0.130	0.235	0.332	0.206	0.394	0.098				
	Right	0.237	0.015	0.081	0.000	0.000	0.000				
	Top	0.271	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[⑥]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑥]	[①]+[⑤]+[⑥]	[①]+[②]+[③]+[⑥]	
Body	Rear	0.546	0.722	0.826	0.454	0.360	0.940	0.952	0.858	0.486	0.984
	Left	0.365	0.462	0.336	0.524	0.228	0.697	0.730	0.434	0.622	0.828
	Right	0.252	0.318	0.237	0.237	0.237	0.333	0.237	0.237	0.237	0.237
	Top	0.377	0.452	0.667	0.499	0.416	0.558	0.895	0.812	0.644	1.040
LTE Band 41											
Body	Rear	0.474	0.218	0.394	0.498	0.126	0.032				
	Left	0.031	0.235	0.332	0.206	0.394	0.098				
	Right	0.437	0.015	0.081	0.000	0.000	0.000				
	Top	0.499	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[⑥]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑥]	[①]+[⑤]+[⑥]	[①]+[②]+[③]+[⑥]	
Body	Rear	0.692	0.868	0.972	0.600	0.506	1.086	1.098	1.004	0.632	1.130
	Left	0.266	0.363	0.237	0.425	0.129	0.598	0.631	0.335	0.523	0.729
	Right	0.452	0.518	0.437	0.437	0.437	0.533	0.437	0.437	0.437	0.437
	Top	0.605	0.680	0.895	0.727	0.644	0.786	1.123	1.040	0.872	1.268
LTE Band 66											
Body	Rear	0.317	0.218	0.394	0.498	0.126	0.032				
	Left	0.075	0.235	0.332	0.206	0.394	0.098				
	Right	0.240	0.015	0.081	0.000	0.000	0.000				
	Top	0.453	0.106	0.181	0.396	0.228	0.145				
Summation											
-	[①]+[②]	[①]+[③]	[①]+[④]	[①]+[⑤]	[①]+[⑥]	[①]+[②]+[③]	[①]+[④]+[⑤]	[①]+[④]+[⑥]	[①]+[⑤]+[⑥]	[①]+[②]+[③]+[⑥]	
Body	Rear	0.535	0.711	0.815	0.443	0.349	0.929	0.941	0.847	0.475	0.973
	Left	0.310	0.407	0.281	0.469	0.173	0.642	0.675	0.379	0.567	0.773
	Right	0.255	0.321	0.240	0.240	0.240	0.336	0.240	0.240	0.240	0.240
	Top	0.559	0.634	0.849	0.681	0.598	0.740	1.077	0.994	0.826	1.222

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (139) of (338)



Body: Sensor Off + RSDB

Exposure Condition /Position	licensed	WLAN				Bluetooth				
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1				
		[①]	[②]	[③]	[④]	[⑤]				
GSM/GPRS 850 Band										
Body	Rear	0.525	0.097	0.153	0.498	0.126	0.032			
	Left	0.174	0.235	0.332	0.206	0.394	0.098			
	Right	0.491	0.015	0.081	0.000	0.000	0.000			
	Top	0.292	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[②]+[③]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]+[⑤]			
Body	Rear	1.120	0.748	1.176	0.804	1.246	1.302	1.273	0.901	1.399
	Left	0.615	0.803	0.712	0.900	1.009	1.106	0.947	1.135	1.341
	Right	0.506	0.506	0.572	0.572	0.506	0.572	0.587	0.587	0.587
	Top	0.794	0.626	0.869	0.701	1.022	1.097	0.975	0.807	1.203
GSM/GPRS 1900 Band										
Body	Rear	0.288	0.097	0.153	0.498	0.126	0.032			
	Left	0.087	0.235	0.332	0.206	0.394	0.098			
	Right	0.197	0.015	0.081	0.000	0.000	0.000			
	Top	0.343	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[②]+[③]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]+[⑤]			
Body	Rear	0.883	0.511	0.939	0.567	1.009	1.065	1.036	0.664	1.162
	Left	0.528	0.716	0.625	0.813	0.922	1.019	0.860	1.048	1.254
	Right	0.212	0.212	0.278	0.278	0.212	0.278	0.293	0.293	0.293
	Top	0.845	0.677	0.920	0.752	1.073	1.148	1.026	0.858	1.254
WCDMA Band II										
Body	Rear	0.473	0.097	0.153	0.498	0.126	0.032			
	Left	0.147	0.235	0.332	0.206	0.394	0.098			
	Right	0.312	0.015	0.081	0.000	0.000	0.000			
	Top	0.610	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[②]+[③]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]+[⑤]			
Body	Rear	1.068	0.696	1.124	0.752	1.194	1.250	1.221	0.849	1.347
	Left	0.588	0.776	0.685	0.873	0.982	1.079	0.920	1.108	1.314
	Right	0.327	0.327	0.393	0.393	0.327	0.393	0.408	0.408	0.408
	Top	1.112	0.944	1.187	1.019	1.340	1.415	1.293	1.125	1.521

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (140) of (338)



Exposure Condition /Position	licensed	WLAN				Bluetooth				
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1				
		[①]	[②]	[③]	[④]	[⑤]	[⑥]			
WCDMA Band IV										
Body	Rear	0.343	0.097	0.153	0.498	0.126	0.032			
	Left	0.083	0.235	0.332	0.206	0.394	0.098			
	Right	0.259	0.015	0.081	0.000	0.000	0.000			
	Top	0.526	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[2]+[④]	[①]+[2]+[⑤]	[①]+[3]+[④]	[①]+[3]+[⑤]	[①]+[2]+[4]+[⑤]	[①]+[3]+[4]+[⑤]	[①]+[2]+[3]+[4]	[①]+[2]+[3]+[4]+[⑤]	[①]+[2]+[3]+[4]+[⑤]	
Body	Rear	0.938	0.566	0.994	0.622	1.064	1.120	1.091	0.719	1.217
	Left	0.524	0.712	0.621	0.809	0.918	1.015	0.856	1.044	1.250
	Right	0.274	0.274	0.340	0.340	0.274	0.340	0.355	0.355	0.355
	Top	1.028	0.860	1.103	0.935	1.256	1.331	1.209	1.041	1.437
WCDMA Band V										
Body	Rear	0.520	0.097	0.153	0.498	0.126	0.032			
	Left	0.157	0.235	0.332	0.206	0.394	0.098			
	Right	0.473	0.015	0.081	0.000	0.000	0.000			
	Top	0.274	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[2]+[④]	[①]+[2]+[⑤]	[①]+[3]+[④]	[①]+[3]+[⑤]	[①]+[2]+[4]+[⑤]	[①]+[3]+[4]+[⑤]	[①]+[2]+[3]+[4]	[①]+[2]+[3]+[4]+[⑤]		
Body	Rear	1.115	0.743	1.171	0.799	1.241	1.297	1.268	0.896	1.394
	Left	0.598	0.786	0.695	0.883	0.992	1.089	0.930	1.118	1.324
	Right	0.488	0.488	0.554	0.554	0.488	0.554	0.569	0.569	0.569
	Top	0.776	0.608	0.851	0.683	1.004	1.079	0.957	0.789	1.185
LTE Band 2										
Body	Rear	0.443	0.097	0.153	0.498	0.126	0.032			
	Left	0.161	0.235	0.332	0.206	0.394	0.098			
	Right	0.280	0.015	0.081	0.000	0.000	0.000			
	Top	0.683	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[2]+[④]	[①]+[2]+[⑤]	[①]+[3]+[④]	[①]+[3]+[⑤]	[①]+[2]+[4]+[⑤]	[①]+[3]+[4]+[⑤]	[①]+[2]+[3]+[4]	[①]+[2]+[3]+[4]+[⑤]		
Body	Rear	1.038	0.666	1.094	0.722	1.164	1.220	1.191	0.819	1.317
	Left	0.602	0.790	0.699	0.887	0.996	1.093	0.934	1.122	1.328
	Right	0.295	0.295	0.361	0.361	0.295	0.361	0.376	0.376	0.376
	Top	1.185	1.017	1.260	1.092	1.413	1.488	1.366	1.198	1.594
LTE Band 5										
Body	Rear	0.485	0.097	0.153	0.498	0.126	0.032			
	Left	0.144	0.235	0.332	0.206	0.394	0.098			
	Right	0.468	0.015	0.081	0.000	0.000	0.000			
	Top	0.265	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[2]+[④]	[①]+[2]+[⑤]	[①]+[3]+[④]	[①]+[3]+[⑤]	[①]+[2]+[4]+[⑤]	[①]+[3]+[4]+[⑤]	[①]+[2]+[3]+[4]	[①]+[2]+[3]+[4]+[⑤]		
Body	Rear	1.080	0.708	1.136	0.764	1.206	1.262	1.233	0.861	1.359
	Left	0.585	0.773	0.682	0.870	0.979	1.076	0.917	1.105	1.311
	Right	0.483	0.483	0.549	0.549	0.483	0.549	0.564	0.564	0.564
	Top	0.767	0.599	0.842	0.674	0.995	1.070	0.948	0.780	1.176

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (141) of (338)



Exposure Condition /Position	licensed	WLAN				Bluetooth				
		2.4 GHz Ant.1	2.4 GHz Ant.2	5 GHz Ant.1	5 GHz Ant.2	Ant.1				
		[①]	[②]	[③]	[④]	[⑤]	[⑥]			
LTE Band 12										
Body	Rear	0.225	0.097	0.153	0.498	0.126	0.032			
	Left	0.083	0.235	0.332	0.206	0.394	0.098			
	Right	0.180	0.015	0.081	0.000	0.000	0.000			
	Top	0.205	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]+[⑤]			
Body	Rear	0.820	0.448	0.876	0.504	0.946	1.002	0.973	0.601	1.099
	Left	0.524	0.712	0.621	0.809	0.918	1.015	0.856	1.044	1.250
	Right	0.195	0.195	0.261	0.261	0.195	0.261	0.276	0.276	0.276
	Top	0.707	0.539	0.782	0.614	0.935	1.010	0.888	0.720	1.116
LTE Band 13										
Body	Rear	0.328	0.097	0.153	0.498	0.126	0.032			
	Left	0.130	0.235	0.332	0.206	0.394	0.098			
	Right	0.237	0.015	0.081	0.000	0.000	0.000			
	Top	0.271	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]+[⑤]			
Body	Rear	0.923	0.551	0.979	0.607	1.049	1.105	1.076	0.704	1.202
	Left	0.571	0.759	0.668	0.856	0.965	1.062	0.903	1.091	1.297
	Right	0.252	0.252	0.318	0.318	0.252	0.318	0.333	0.333	0.333
	Top	0.773	0.605	0.848	0.680	1.001	1.076	0.954	0.786	1.182
LTE Band 41										
Body	Rear	0.474	0.097	0.153	0.498	0.126	0.032			
	Left	0.031	0.235	0.332	0.206	0.394	0.098			
	Right	0.432	0.015	0.081	0.000	0.000	0.000			
	Top	0.499	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]+[⑤]			
Body	Rear	1.069	0.697	1.125	0.753	1.195	1.251	1.222	0.850	1.348
	Left	0.472	0.660	0.569	0.757	0.866	0.963	0.804	0.992	1.198
	Right	0.447	0.447	0.513	0.513	0.447	0.513	0.528	0.528	0.528
	Top	1.001	0.833	1.076	0.908	1.229	1.304	1.182	1.014	1.410
LTE Band 66										
Body	Rear	0.317	0.097	0.153	0.498	0.126	0.032			
	Left	0.075	0.235	0.332	0.206	0.394	0.098			
	Right	0.240	0.015	0.081	0.000	0.000	0.000			
	Top	0.453	0.106	0.181	0.396	0.228	0.145			
Summation										
-	[①]+[②]+[④]	[①]+[②]+[⑤]	[①]+[③]+[④]	[①]+[③]+[⑤]	[①]+[②]+[④]+[⑤]	[①]+[③]+[④]+[⑤]	[①]+[②]+[③]+[④]+[⑤]			
Body	Rear	0.912	0.540	0.968	0.596	1.038	1.094	1.065	0.693	1.191
	Left	0.516	0.704	0.613	0.801	0.910	1.007	0.848	1.036	1.242
	Right	0.255	0.255	0.321	0.321	0.255	0.321	0.336	0.336	0.336
	Top	0.955	0.787	1.030	0.862	1.183	1.258	1.136	0.968	1.364

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (142) of (338)

KCTL**Simultaneous transmission SAR test exclusion considerations**

- Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneously transmitting antenna. When the sum of 1-g or 10-g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration. Per KDB Publication 447498 D01v06.
- When the sum of SAR1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR1g 1.6 W/kg), the SPLSR procedures is not required. When the sum of SAR1g is greater than the SAR limit (SAR1g 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

KCTL

13. SAR Measurement Variability

Per FCC KDB Publication 865664 D01v01r04, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

- 1) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg.
- 2) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
- 3) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
- 4) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Band	Mode	Ant.	Frequency (MHz)	EUT Position	Separation Distance (mm)	Measured 1 g SAR (W/kg)	Repeated 1 g SAR (W/kg)	Ratio
-	-	-	-	-	-	-	-	-

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (144) of (338)

KCTL**14. Measurement Uncertainty**

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Standard 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.

KCTL

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (145) of (338)



15. Test Equipment Information

Test Platform	SPEAG DASY5 System			
Version	DASY52: 52.10.4.1527 / SEMCAD: 14.6.14 (7483)			
Location	KCTL Inc, 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea			
Manufacture	SPEAG			
Hardware Reference				
Equipment	Model	Serial Number	Date of Calibration	Due date of next Calibration
Shield Room	-	8F - 1	-	-
Shield Room	-	8F - 2	-	-
Shield Room	-	8F - 4	-	-
DASY5 Robot	TX90XL speag	F07/554JA1/A/01	-	-
DASY5 Robot	TX90XL	F12/5L7FA1/A/01	-	-
DASY6 Robot	TX60 Lspeag	F/19/0007289/A/001	-	-
Phantom	Twin SAM Phantom	1363	-	-
Phantom	2mm Oval Phantom ELI5	1173	-	-
Phantom	2mm Oval Phantom ELI5	1220	-	-
Phantom	Twin SAM Phantom	1724	-	-
Phantom	Twin SAM Phantom	1728	-	-
Phantom	2mm Oval Phantom ELI5	1178	-	-
Phantom	2mm Oval Phantom ELI5	2098	-	-
Mounting Device	Mounting Device	-	-	-
Mounting Device	Laptop Holder	-	-	-
DAE	DAE4	666	2020-01-24	2021-01-24
DAE	DAE4	1586	2020-04-22	2021-04-22
Probe	EX3DV4	3928	2020-01-30	2021-01-30
Probe	EX3DV4	3865	2019-08-28	2020-08-28
ESG Vector Signal Generator	E4438C	MY42080486	2020-05-11	2021-05-11
ESG Vector Signal Generator	E4438C	MY42080845	2020-03-12	2021-03-12
Dual Power Meter	E4419B	GB43312301	2020-05-12	2021-05-12
Dual Power Meter	EPM-442A	GB37480680	2020-05-12	2021-05-12
Power Sensor	8481H	3318A 19379	2020-05-12	2021-05-12
Power Sensor	8481H	3318A 19377	2020-05-12	2021-05-12
Power Sensor	8481H	2703A11902	2020-05-12	2021-05-12
Power Sensor	8481H	3318A18090	2020-05-12	2021-05-12
Attenuator	8491B 3dB	17387	2020-05-12	2021-05-12
Attenuator	8491B 10dB	29425	2020-05-12	2021-05-12
Attenuator	8491B-6dB	MY39270294	2020-05-12	2021-05-12
Attenuator	8491A	21552	2020-05-12	2021-05-12

This test report shall not be reproduced, except in full, without the written approval

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0035-B
Page (146) of (338)



Equipment	Model	Serial Number	Date of Calibration	Due date of next Calibration
Attenuator	8491A	35560	2020-05-12	2021-05-12
Attenuator	8491A	35934	2020-05-12	2021-05-12
Power Amplifier	GRF5039	1062	2020-05-12	2021-05-12
Power Amplifier	2055-BBS3Q7E9I	1005D/C0521	2020-03-12	2021-03-12
Power Amplifier	5190FE	1012	2020-05-12	2021-05-12
Power Amplifier	AMP2027	10010	2020-05-12	2021-05-12
Dual Directional Coupler	778D	16059	2020-05-12	2021-05-12
Dual Directional Coupler	772D	2839A00719	2020-05-12	2021-05-12
Dual Directional Coupler	778D-012	50136	2020-05-12	2021-05-12
Low Pass Filter	LA-15N	36543	2020-05-12	2021-05-12
Low Pass Filter	LA-30N	40058	2020-05-12	2021-05-12
Low Pass Filter	LA-60N	40059	2020-05-12	2021-05-12
Low Pass Filter	VLF-6000+	31838	2020-05-12	2021-05-12
Dipole Validation Kits	D750V3	1183	2018-09-03	2020-09-03
Dipole Validation Kits	D850V2	1006	2020-04-21	2022-04-21
Dipole Validation Kits	D1750V2	1072	2020-04-20	2022-04-20
Dipole Validation Kits	D1900V2	5d160	2020-04-22	2022-04-22
Dipole Validation Kits	D2450V2	892	2019-04-24	2021-04-24
Dipole Validation Kits	D2600V2	1003	2019-05-28	2021-05-28
Dipole Validation Kits	D5GHzV2	1134	2020-05-20	2022-05-20
Network Analyzer	E5071B	MY42403524	2020-02-27	2021-02-27
Dielectric Assessment Kit	DAK-3.5	1078	2020-05-19	2021-05-19
Humidity/Temp.	MHB-382SD	73871	2020-05-14	2021-05-14
Humidity/Temp.	MHB-382SD	23107	2020-05-14	2021-05-14
Humidity/Temp.	MHB-382SD	46301	2020-03-21	2021-03-21
Wideband Radio Communication Tester	CMW500	168683	2020-04-06	2021-04-06
Wideband Radio Communication Tester	CMW500	137524	2020-05-11	2021-05-11

16. Test System Verification Results

Date: 2020-07-25

Test Laboratory: KCTL Inc.

File Name: [750 MHz Verification Input Power 250 mW 2020-07-25 LTE B12.da52:0](#)**DUT: Dipole 750 MHz D750V3, Type: D750V3, Serial: D750V3 - SN:1183**Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 750$ MHz; $\sigma = 0.897$ S/m; $\epsilon_r = 41.569$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.45, 10.45, 10.45) @ 750 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin SN1724; Type: QD000P40CD; Serial: TP:1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/750 MHz Verification Input Power 250 mW 2020-07-25/Area Scan (7x13x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.74 W/kg

Configuration/750 MHz Verification Input Power 250 mW 2020-07-25/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 57.68 V/m; Power Drift = 0.09 dB

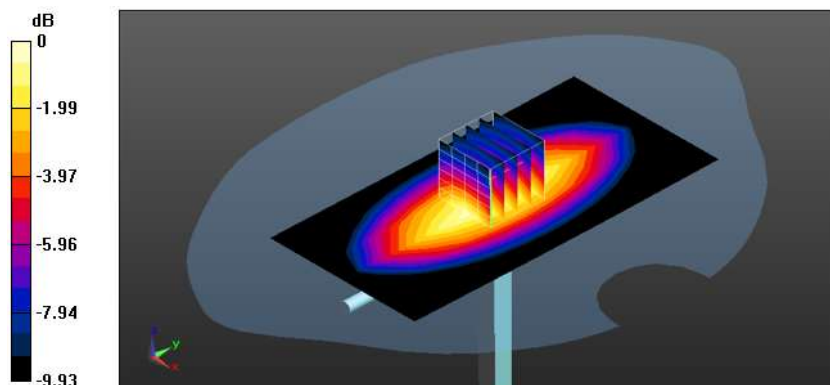
Peak SAR (extrapolated) = 3.07 W/kg

SAR(1 g) = 2.12 W/kg; SAR(10 g) = 1.42 W/kg

Smallest distance from peaks to all points 3 dB below = 22.6 mm

Ratio of SAR at M2 to SAR at M1 = 69%

Maximum value of SAR (measured) = 2.77 W/kg



0 dB = 2.77 W/kg = 4.42 dBW/kg

Date: 2020-07-25

Test Laboratory: KCTL Inc.

File Name: [750 MHz Verification Input Power 250 mW 2020-07-25 LTE B13.da52:0](#)**DUT: Dipole 750 MHz D750V3, Type: D750V3, Serial: D750V3 - SN:1183**Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 750$ MHz; $\sigma = 0.887$ S/m; $\epsilon_r = 43.124$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.45, 10.45, 10.45) @ 750 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin SN1724; Type: QD000P40CD; Serial: TP:1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/750 MHz Verification Input Power 250 mW 2020-07-25/Area Scan (7x13x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.65 W/kg

Configuration/750 MHz Verification Input Power 250 mW 2020-07-25/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 57.50 V/m; Power Drift = 0.01 dB

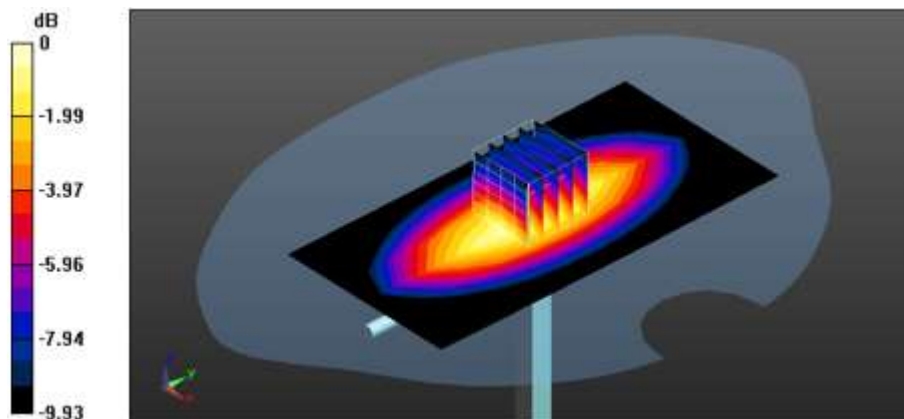
Peak SAR (extrapolated) = 2.95 W/kg

SAR(1 g) = 2.04 W/kg; SAR(10 g) = 1.37 W/kg

Smallest distance from peaks to all points 3 dB below = 21.5 mm

Ratio of SAR at M2 to SAR at M1 = 68.9%

Maximum value of SAR (measured) = 2.67 W/kg



0 dB = 2.67 W/kg = 4.27 dBW/kg

Date: 2020-07-28

Test Laboratory: KCTL Inc.

File Name: [750 MHz Verification Input Power 250 mW 2020-07-28 LTE B12.da52:0](#)**DUT: Dipole 750 MHz D750V3, Type: D750V3, Serial: D750V3 - SN:1183**Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 750$ MHz; $\sigma = 0.867$ S/m; $\epsilon_r = 41.606$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.45, 10.45, 10.45) @ 750 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/750 MHz Verification Input Power 250 mW 2020-07-28/Area Scan (7x13x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.60 W/kg

Configuration/750 MHz Verification Input Power 250 mW 2020-07-28/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 57.42 V/m; Power Drift = 0.03 dB

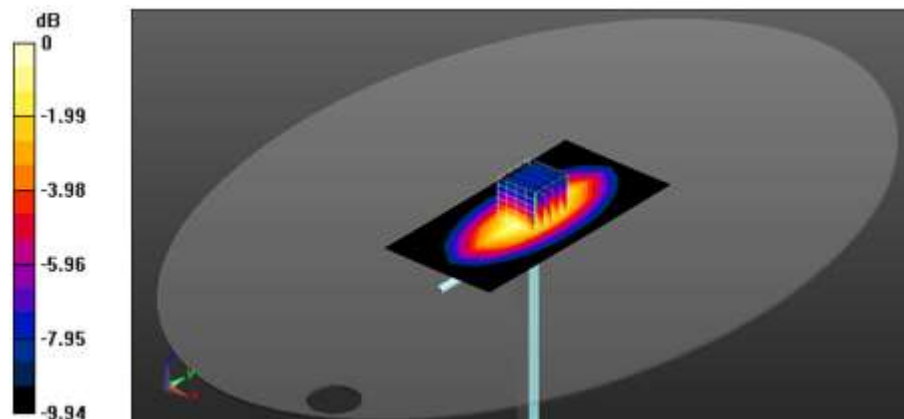
Peak SAR (extrapolated) = 2.95 W/kg

SAR(1 g) = 2.02 W/kg; SAR(10 g) = 1.36 W/kg

Smallest distance from peaks to all points 3 dB below = 21.5 mm

Ratio of SAR at M2 to SAR at M1 = 68.1%

Maximum value of SAR (measured) = 2.65 W/kg



0 dB = 2.65 W/kg = 4.23 dBW/kg

Date: 2020-07-28

Test Laboratory: KCTL Inc.

File Name: [750 MHz Verification Input Power 250 mW 2020-07-28 LTE B13.da52:0](#)**DUT: Dipole 750 MHz D750V3, Type: D750V3, Serial: D750V3 - SN:1183**Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 750$ MHz; $\sigma = 0.867$ S/m; $\epsilon_r = 42.303$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.45, 10.45, 10.45) @ 750 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/750 MHz Verification Input Power 250 mW 2020-07-28/Area Scan (7x13x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.64 W/kg

Configuration/750 MHz Verification Input Power 250 mW 2020-07-28/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 57.86 V/m; Power Drift = 0.10 dB

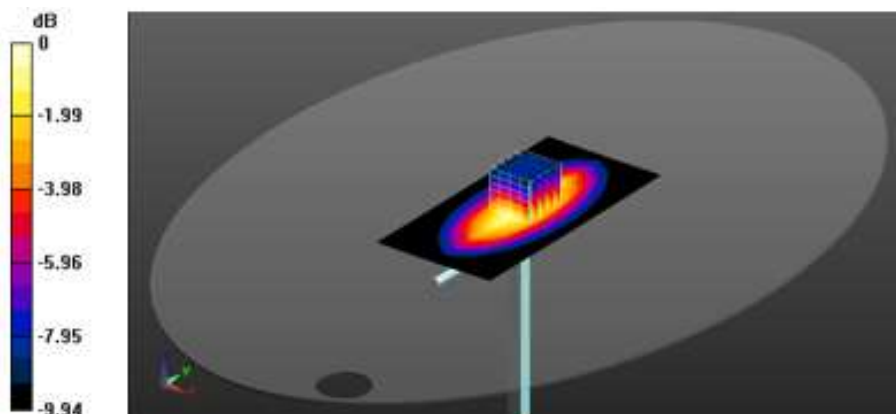
Peak SAR (extrapolated) = 3.01 W/kg

SAR(1 g) = 2.06 W/kg; SAR(10 g) = 1.39 W/kg

Smallest distance from peaks to all points 3 dB below = 20.5 mm

Ratio of SAR at M2 to SAR at M1 = 68.1%

Maximum value of SAR (measured) = 2.70 W/kg



0 dB = 2.70 W/kg = 4.31 dBW/kg

Date: 2020-08-04

Test Laboratory: KCTL Inc.

File Name: [750 MHz Verification Input Power 250 mW 2020-08-04 LTE B12.da52:0](#)**DUT: Dipole 750 MHz D750V3, Type: D750V3, Serial: D750V3 - SN:1183**Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 750$ MHz; $\sigma = 0.906$ S/m; $\epsilon_r = 41.93$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.45, 10.45, 10.45) @ 750 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/750 MHz Verification Input Power 250 mW 2020-08-04/Area Scan (7x13x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.52 W/kg

Configuration/750 MHz Verification Input Power 250 mW 2020-08-04/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 56.20 V/m; Power Drift = -0.03 dB

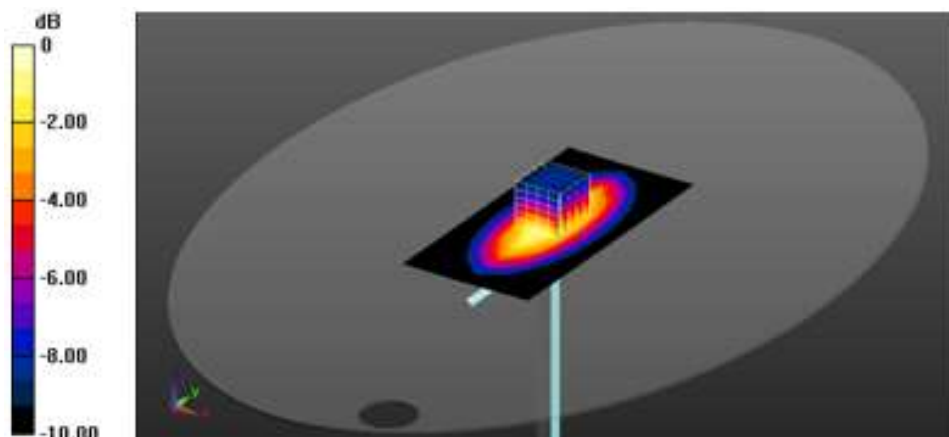
Peak SAR (extrapolated) = 2.89 W/kg

SAR(1 g) = 1.97 W/kg; SAR(10 g) = 1.32 W/kg

Smallest distance from peaks to all points 3 dB below = 20 mm

Ratio of SAR at M2 to SAR at M1 = 68%

Maximum value of SAR (measured) = 2.59 W/kg



0 dB = 2.59 W/kg = 4.13 dBW/kg

Date: 2020-08-04

Test Laboratory: KCTL Inc.

File Name: [750 MHz Verification Input Power 250 mW 2020-08-04 LTE B13.da52:0](#)**DUT: Dipole 750 MHz D750V3, Type: D750V3, Serial: D750V3 - SN:1183**Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 750$ MHz; $\sigma = 0.883$ S/m; $\epsilon_r = 41.019$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.45, 10.45, 10.45) @ 750 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/750 MHz Verification Input Power 250 mW 2020-08-04/Area Scan (7x13x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.62 W/kg

Configuration/750 MHz Verification Input Power 250 mW 2020-08-04/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 57.35 V/m; Power Drift = 0.01 dB

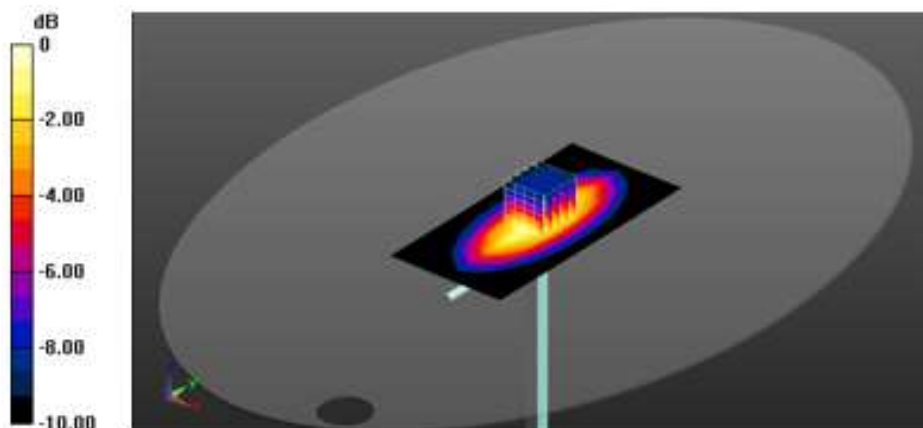
Peak SAR (extrapolated) = 2.98 W/kg

SAR(1 g) = 2.03 W/kg; SAR(10 g) = 1.36 W/kg

Smallest distance from peaks to all points 3 dB below = 17.9 mm

Ratio of SAR at M2 to SAR at M1 = 67.9%

Maximum value of SAR (measured) = 2.67 W/kg



0 dB = 2.67 W/kg = 4.27 dBW/kg

Date: 2020-07-26

Test Laboratory: KCTL Inc.

File Name: [850 MHz Verification Input Power 250 mW 2020-07-26.da52:0](#)**DUT: Dipole 850 MHz D850V2, Type: D850V2, Serial: D850V2 - SN:1006**Communication System: UID 0, CW (0); Frequency: 850 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 850$ MHz; $\sigma = 0.936$ S/m; $\epsilon_r = 41.289$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.07, 10.07, 10.07) @ 850 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

System Performance Check/850 MHz Verification Input Power 250 mW 2020-07-26/Area Scan

(7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 3.36 W/kg

System Performance Check/850 MHz Verification Input Power 250 mW 2020-07-26/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 62.33 V/m; Power Drift = 0.03 dB

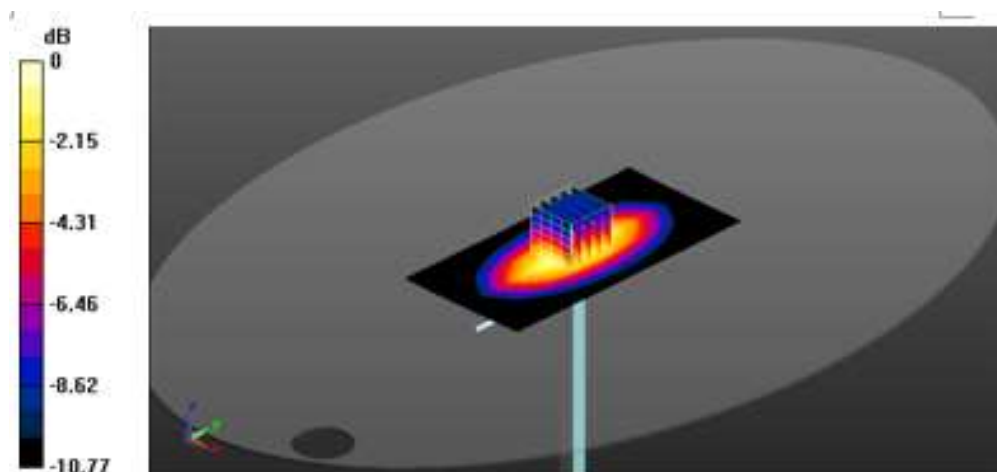
Peak SAR (extrapolated) = 3.80 W/kg

SAR(1 g) = 2.52 W/kg; SAR(10 g) = 1.65 W/kg

Smallest distance from peaks to all points 3 dB below = 17.2 mm

Ratio of SAR at M2 to SAR at M1 = 66%

Maximum value of SAR (measured) = 3.37 W/kg



0 dB = 3.37 W/kg = 5.28 dBW/kg

Date: 2020-07-27

Test Laboratory: KCTL Inc.

File Name: [850 MHz Verification Input Power 250 mW 2020-07-27.da52:0](#)**DUT: Dipole 850 MHz D850V2, Type: D850V2, Serial: D850V2 - SN:1006**Communication System: UID 0, CW (0); Frequency: 850 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 850$ MHz; $\sigma = 0.918$ S/m; $\epsilon_r = 40.785$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.07, 10.07, 10.07) @ 850 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

System Performance Check/850 MHz Verification Input Power 250 mW 2020-07-27/Area Scan**(7x13x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 3.25 W/kg

System Performance Check/850 MHz Verification Input Power 250 mW 2020-07-27/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 62.06 V/m; Power Drift = 0.02 dB

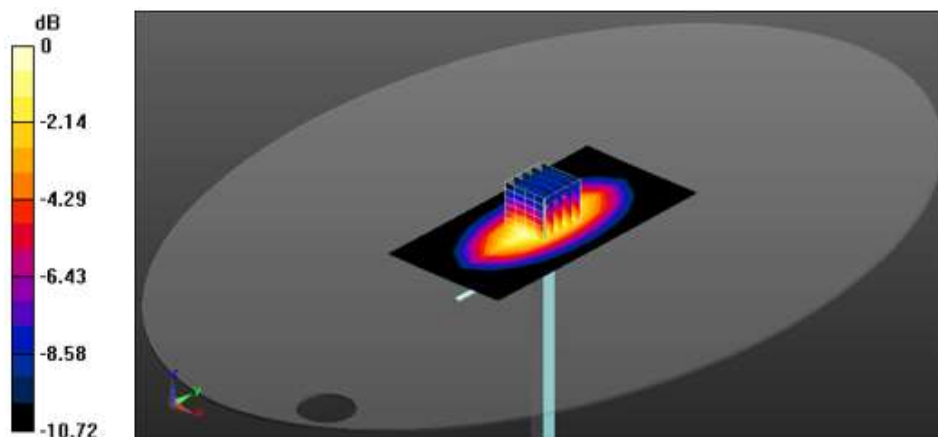
Peak SAR (extrapolated) = 3.67 W/kg

SAR(1 g) = 2.43 W/kg; SAR(10 g) = 1.59 W/kg

Smallest distance from peaks to all points 3 dB below = 16.3 mm

Ratio of SAR at M2 to SAR at M1 = 65.8%

Maximum value of SAR (measured) = 3.26 W/kg



0 dB = 3.26 W/kg = 5.13 dBW/kg

Date: 2020-08-02

Test Laboratory: KCTL Inc.

File Name: [850 MHz Verification Input Power 250 mW 2020-08-02.da52:0](#)**DUT: Dipole 850 MHz D850V2, Type: D850V2, Serial: D850V2 - SN:1006**Communication System: UID 0, CW (0); Frequency: 850 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 850$ MHz; $\sigma = 0.903$ S/m; $\epsilon_r = 42.179$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.07, 10.07, 10.07) @ 850 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin SN1724; Type: QD000P40CD; Serial: TP:1724
- Measurement SW: DASY52, Version 52.10 (4);

System Performance Check/850 MHz Verification Input Power 250 mW 2020-08-02/Area Scan**(7x13x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 3.25 W/kg

System Performance Check/850 MHz Verification Input Power 250 mW 2020-08-02/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 62.21 V/m; Power Drift = 0.09 dB

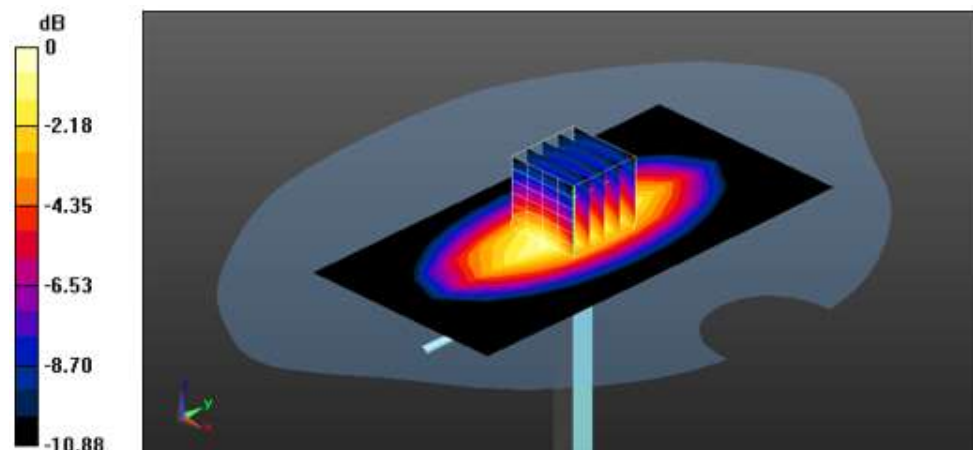
Peak SAR (extrapolated) = 3.74 W/kg

SAR(1 g) = 2.47 W/kg; SAR(10 g) = 1.61 W/kg

Smallest distance from peaks to all points 3 dB below = 16 mm

Ratio of SAR at M2 to SAR at M1 = 65.9%

Maximum value of SAR (measured) = 3.31 W/kg



0 dB = 3.31 W/kg = 5.20 dBW/kg

Date: 2020-08-03

Test Laboratory: KCTL Inc.

File Name: [850 MHz Verification Input Power 250 mW 2020-08-03.da52:0](#)**DUT: Dipole 850 MHz D850V2, Type: D850V2, Serial: D850V2 - SN:1006**Communication System: UID 0, CW (0); Frequency: 850 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 850$ MHz; $\sigma = 0.918$ S/m; $\epsilon_r = 40.512$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.07, 10.07, 10.07) @ 850 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

System Performance Check/850 MHz Verification Input Power 250 mW 2020-08-03/Area Scan**(7x13x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 3.41 W/kg

System Performance Check/850 MHz Verification Input Power 250 mW 2020-08-03/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 62.89 V/m; Power Drift = 0.12 dB

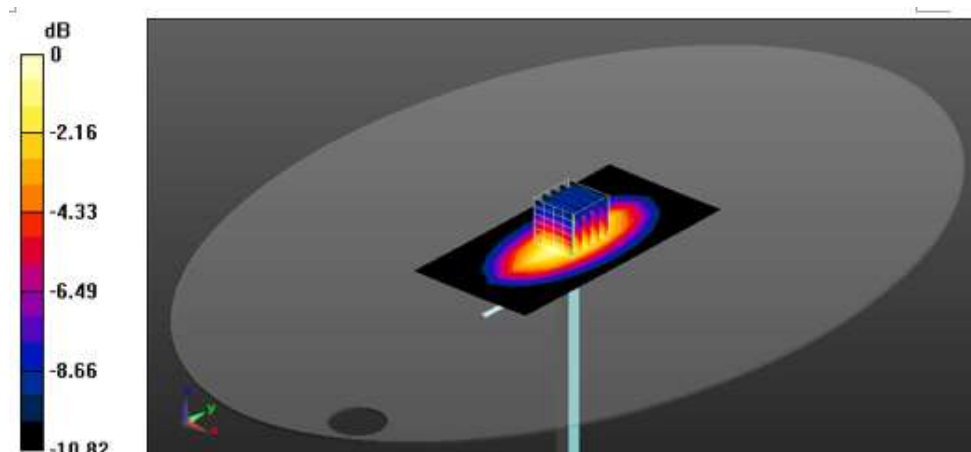
Peak SAR (extrapolated) = 3.94 W/kg

SAR(1 g) = 2.59 W/kg; SAR(10 g) = 1.69 W/kg

Smallest distance from peaks to all points 3 dB below = 17.2 mm

Ratio of SAR at M2 to SAR at M1 = 65.4%

Maximum value of SAR (measured) = 3.49 W/kg



0 dB = 3.49 W/kg = 5.43 dBW/kg

Date: 2020-07-17

Test Laboratory: KCTL Inc.

File Name: [1750 MHz Verification Input Power 250 mW 2020-07-17.da52:0](#)**DUT: Dipole 1750 MHz D1750V2, Type: D1750V2, Serial: D1750V2 - SN:1072**Communication System: UID 0, CW (0); Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1750$ MHz; $\sigma = 1.364$ S/m; $\epsilon_r = 39.15$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(9.01, 9.01, 9.01) @ 1750 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1750 MHz Verification Input Power 250 mW 2020-07-17/Area Scan (8x11x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 10.0 W/kg

Configuration/1750 MHz Verification Input Power 250 mW 2020-07-17/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 104.5 V/m; Power Drift = 0.04 dB

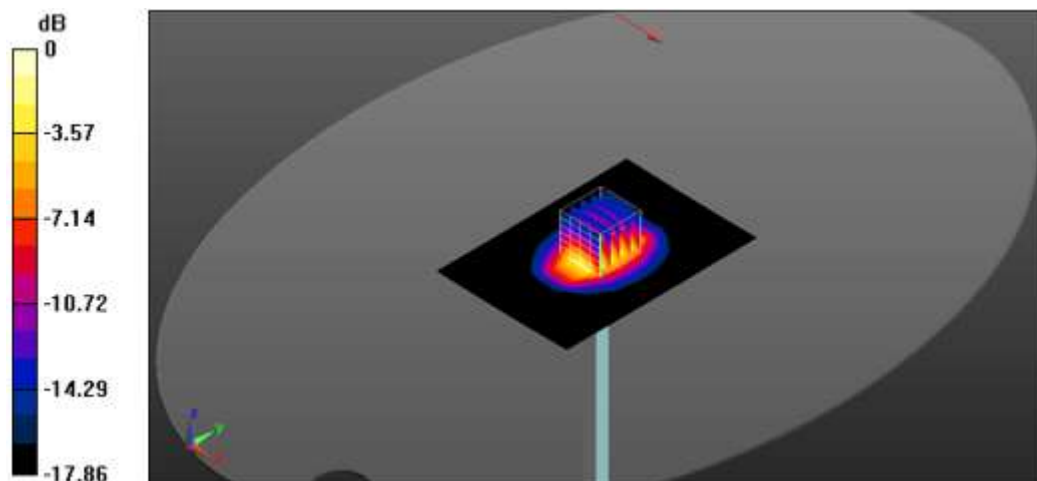
Peak SAR (extrapolated) = 16.8 W/kg

SAR(1 g) = 9.1 W/kg; SAR(10 g) = 4.78 W/kg

Smallest distance from peaks to all points 3 dB below = 10.7 mm

Ratio of SAR at M2 to SAR at M1 = 53.7%

Maximum value of SAR (measured) = 14.2 W/kg



0 dB = 14.2 W/kg = 11.52 dBW/kg

Date: 2020-07-22

Test Laboratory: KCTL Inc.

File Name: [1750 MHz Verification Input Power 250 mW 2020-07-22.da52:0](#)**DUT: Dipole 1750 MHz D1750V2, Type: D1750V2, Serial: D1750V2 - SN:1072**Communication System: UID 0, CW (0); Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1750$ MHz; $\sigma = 1.367$ S/m; $\epsilon_r = 40.109$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(9.01, 9.01, 9.01) @ 1750 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1750 MHz Verification Input Power 250 mW 2020-07-22/Area Scan (8x11x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 10.1 W/kg

Configuration/1750 MHz Verification Input Power 250 mW 2020-07-22/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 105.3 V/m; Power Drift = 0.00 dB

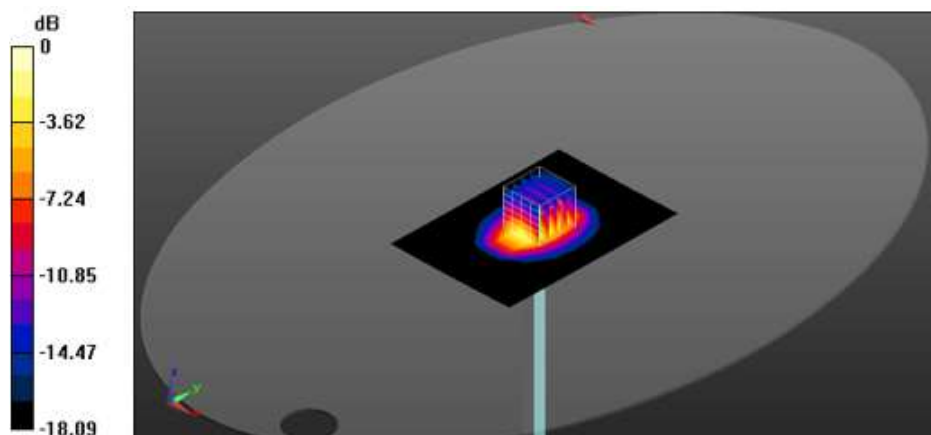
Peak SAR (extrapolated) = 16.9 W/kg

SAR(1 g) = 9.19 W/kg; SAR(10 g) = 4.84 W/kg

Smallest distance from peaks to all points 3 dB below = 10.7 mm

Ratio of SAR at M2 to SAR at M1 = 53.7%

Maximum value of SAR (measured) = 14.2 W/kg



0 dB = 14.2 W/kg = 11.52 dBW/kg

Date: 2020-07-23

Test Laboratory: KCTL Inc.

File Name: [1750 MHz Verification Input Power 250 mW 2020-07-23.da52:0](#)**DUT: Dipole 1750 MHz D1750V2, Type: D1750V2, Serial: D1750V2 - SN:1072**Communication System: UID 0, CW (0); Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1750$ MHz; $\sigma = 1.364$ S/m; $\epsilon_r = 39.548$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(9.01, 9.01, 9.01) @ 1750 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin 1728; Type: QD000P40CD; Serial: TP:1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1750 MHz Verification Input Power 250 mW 2020-07-23/Area Scan (8x11x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 10.5 W/kg

Configuration/1750 MHz Verification Input Power 250 mW 2020-07-23/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 102.3 V/m; Power Drift = -0.00 dB

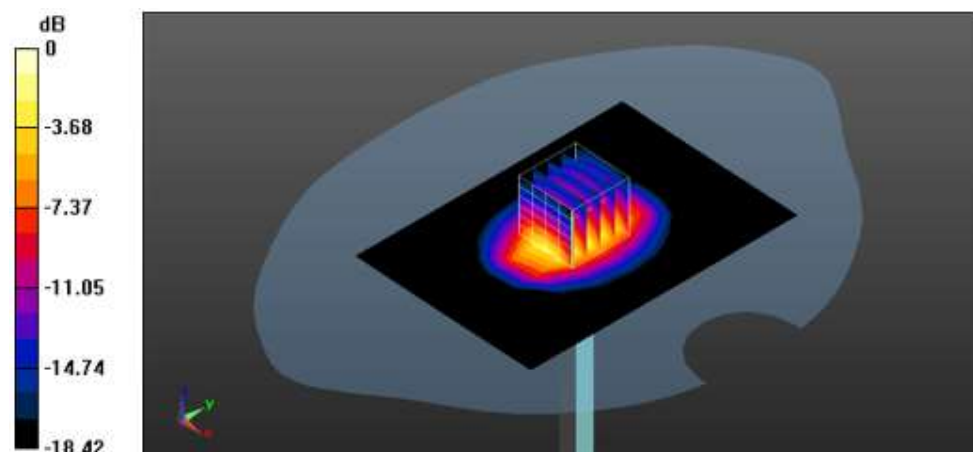
Peak SAR (extrapolated) = 17.2 W/kg

SAR(1 g) = 8.99 W/kg; SAR(10 g) = 4.63 W/kg

Smallest distance from peaks to all points 3 dB below = 11.2 mm

Ratio of SAR at M2 to SAR at M1 = 51.7%

Maximum value of SAR (measured) = 14.3 W/kg



0 dB = 14.3 W/kg = 11.55 dBW/kg

Date: 2020-07-16

Test Laboratory: KCTL Inc.

File Name: [1900 MHz Verification Input Power 250 mW 2020-07-16.da52:0](#)**DUT: Dipole 1900 MHz D1900V2, Type: D1900V2, Serial: D1900V2 - SN:5d160**Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.406$ S/m; $\epsilon_r = 38.896$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1900 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1900 MHz Verification Input Power 250 mW 2020-07-16/Area Scan (7x11x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 15.9 W/kg

Configuration/1900 MHz Verification Input Power 250 mW 2020-07-16/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 108.9 V/m; Power Drift = -0.07 dB

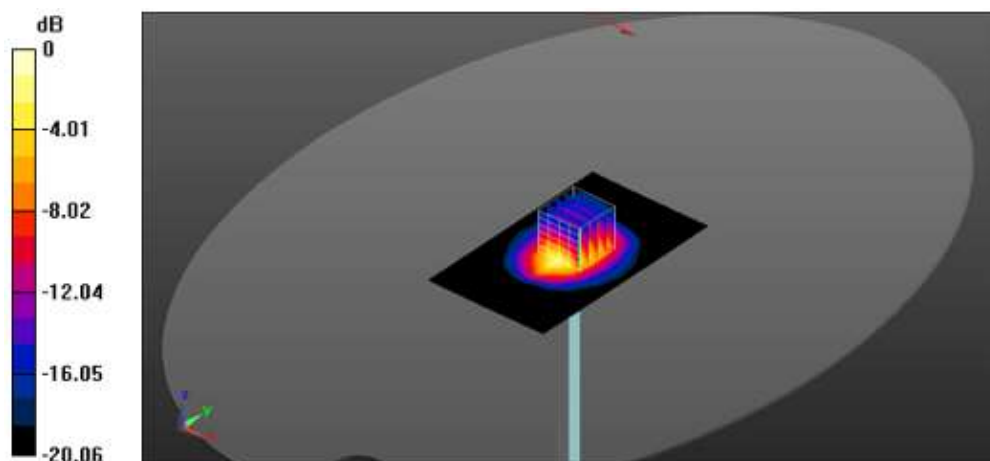
Peak SAR (extrapolated) = 19.8 W/kg

SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.11 W/kg

Smallest distance from peaks to all points 3 dB below = 9.7 mm

Ratio of SAR at M2 to SAR at M1 = 50%

Maximum value of SAR (measured) = 16.1 W/kg



0 dB = 16.1 W/kg = 12.07 dBW/kg

Date: 2020-07-20

Test Laboratory: KCTL Inc.

File Name: [1900 MHz Verification Input Power 250 mW 2020-07-20.da52:0](#)**DUT: Dipole 1900 MHz D1900V2, Type: D1900V2, Serial: D1900V2 - SN:5d160**Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.435$ S/m; $\epsilon_r = 40.045$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1900 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin 1728; Type: QD000P40CD; Serial: TP:1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1900 MHz Verification Input Power 250 mW 2020-07-20/Area Scan (7x11x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 17.2 W/kg

Configuration/1900 MHz Verification Input Power 250 mW 2020-07-20/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 111.9 V/m; Power Drift = 0.10 dB

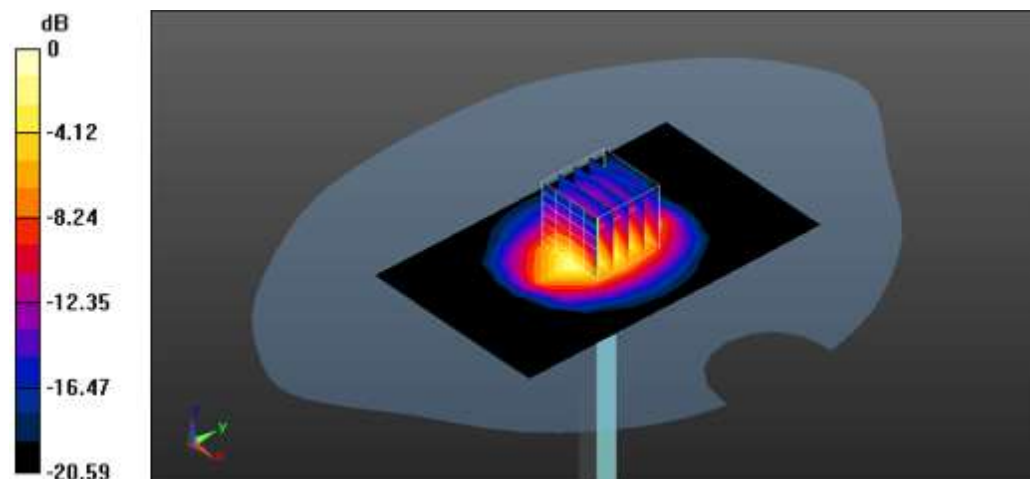
Peak SAR (extrapolated) = 20.7 W/kg

SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.04 W/kg

Smallest distance from peaks to all points 3 dB below = 11.2 mm

Ratio of SAR at M2 to SAR at M1 = 48.3%

Maximum value of SAR (measured) = 16.6 W/kg



0 dB = 16.6 W/kg = 12.20 dBW/kg

Date: 2020-07-21

Test Laboratory: KCTL Inc.

File Name: [1900 MHz Verification Input Power 250 mW 2020-07-21.da52:0](#)**DUT: Dipole 1900 MHz D1900V2, Type: D1900V2, Serial: D1900V2 - SN:5d160**Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.424$ S/m; $\epsilon_r = 39.833$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1900 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1900 MHz Verification Input Power 250 mW 2020-07-21/Area Scan (7x11x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 14.9 W/kg

Configuration/1900 MHz Verification Input Power 250 mW 2020-07-21/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 104.8 V/m; Power Drift = -0.04 dB

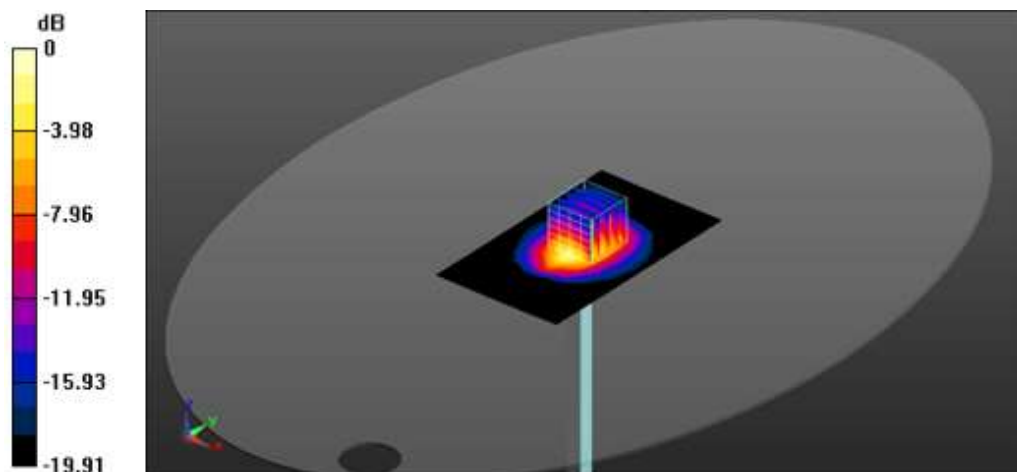
Peak SAR (extrapolated) = 18.6 W/kg

SAR(1 g) = 9.46 W/kg; SAR(10 g) = 4.8 W/kg

Smallest distance from peaks to all points 3 dB below = 10.7 mm

Ratio of SAR at M2 to SAR at M1 = 50.4%

Maximum value of SAR (measured) = 15.0 W/kg



0 dB = 15.0 W/kg = 11.76 dBW/kg

Date: 2020-08-05

Test Laboratory: KCTL Inc.

File Name: [1900 MHz Verification Input Power 250 mW 2020-08-05.da52:0](#)**DUT: Dipole 1900 MHz D1900V2, Type: D1900V2, Serial: D1900V2 - SN:5d160**Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.419$ S/m; $\epsilon_r = 39.91$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1900 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1900 MHz Verification Input Power 250 mW 2020-08-05/Area Scan (7x11x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 15.1 W/kg

Configuration/1900 MHz Verification Input Power 250 mW 2020-08-05/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 105.8 V/m; Power Drift = -0.07 dB

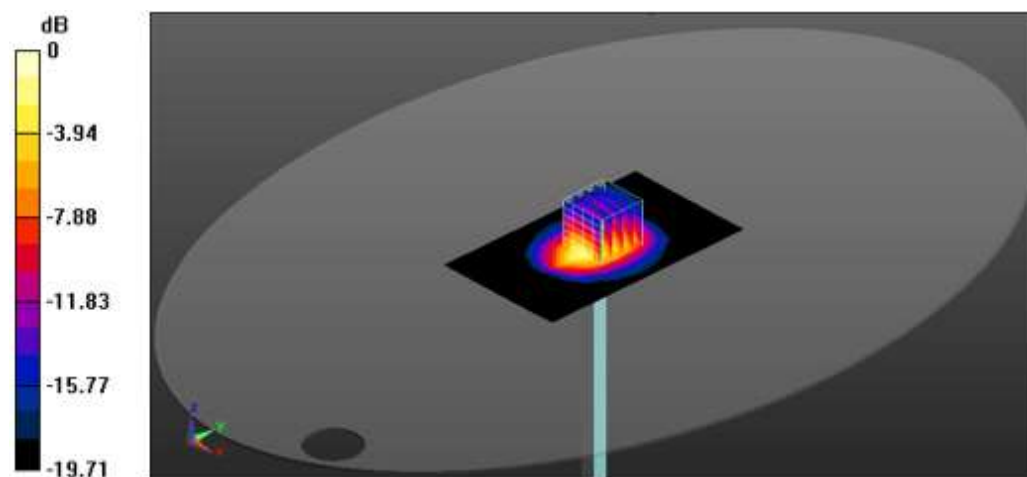
Peak SAR (extrapolated) = 18.3 W/kg

SAR(1 g) = 9.55 W/kg; SAR(10 g) = 4.92 W/kg

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 51.5%

Maximum value of SAR (measured) = 14.9 W/kg



0 dB = 14.9 W/kg = 11.73 dBW/kg

Date: 2020-08-12

Test Laboratory: KCTL Inc.

File Name: [1900 MHz Verification Input Power 250 mW 2020-08-12.da52:0](#)**DUT: Dipole 1900 MHz D1900V2, Type: D1900V2, Serial: D1900V2 - SN:5d160**Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1900$ MHz; $\sigma = 1.413$ S/m; $\epsilon_r = 39.42$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1900 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/1900 MHz Verification Input Power 250 mW 2020-08-12/Area Scan (7x11x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 15.9 W/kg

Configuration/1900 MHz Verification Input Power 250 mW 2020-08-12/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 108.3 V/m; Power Drift = -0.00 dB

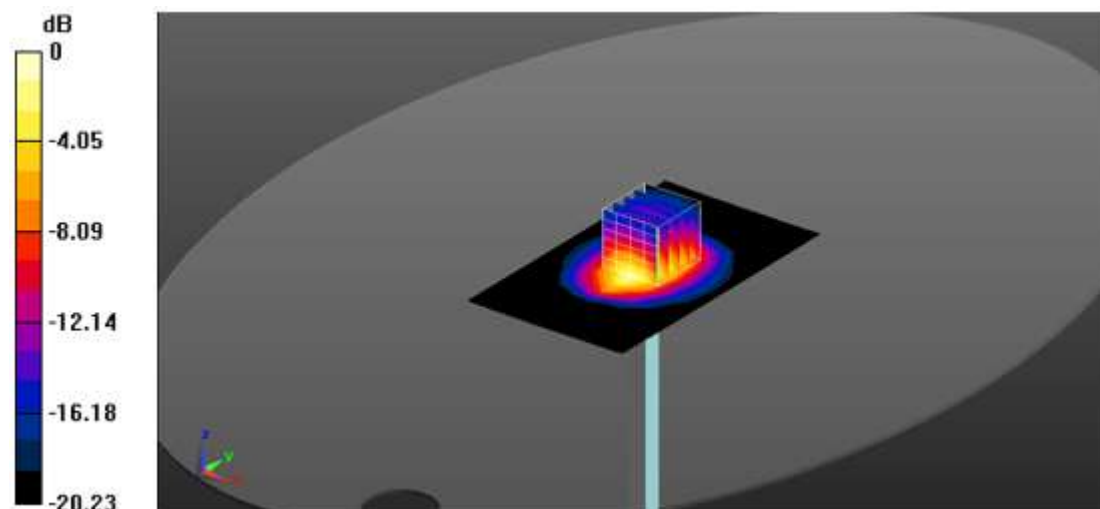
Peak SAR (extrapolated) = 19.3 W/kg

SAR(1 g) = 9.86 W/kg; SAR(10 g) = 5.02 W/kg

Smallest distance from peaks to all points 3 dB below = 10.7 mm

Ratio of SAR at M2 to SAR at M1 = 50.7%

Maximum value of SAR (measured) = 15.6 W/kg



0 dB = 15.6 W/kg = 11.93 dBW/kg

Date: 2020-07-31

Test Laboratory: KCTL Inc.

File Name: [2450 MHz Verification Input Power 100 mW 2020-07-31.da5:0](#)**DUT: Dipole 2450 MHz D2450V2, Type: D2450V2, Serial: D2450V2 - SN:892**

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2450$ MHz; $\sigma = 1.762$ S/m; $\epsilon_r = 38.776$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928; ConvF(7.33, 7.33, 7.33) @ 2450 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -3; Type: QD OVA 002 AA; Serial: 1173
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/2450 MHz Verification Input Power 100 mW 2020-07-31/Area Scan (9x12x1):

Measurement grid: dx=12mm, dy=12mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 5.87 W/kg

Configuration/2450 MHz Verification Input Power 100 mW 2020-07-31/Zoom Scan**(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 65.00 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 11.2 W/kg

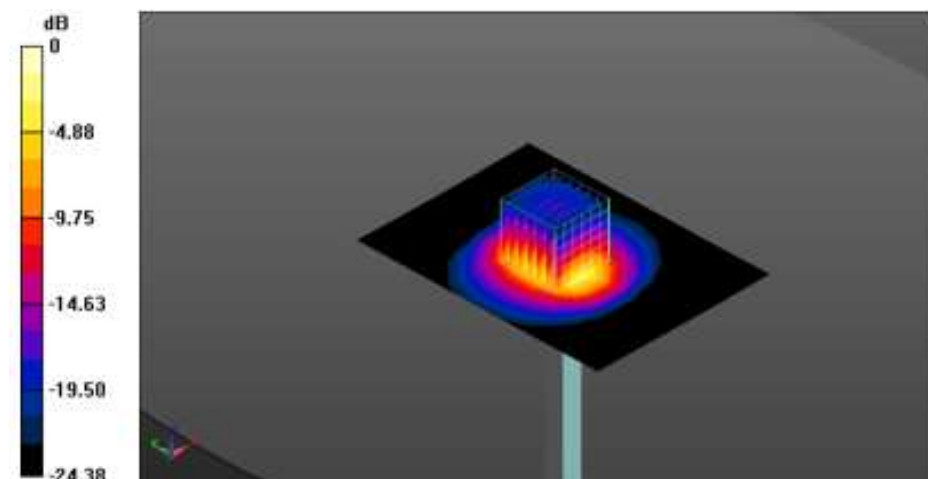
SAR(1 g) = 5.02 W/kg; SAR(10 g) = 2.25 W/kg

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 44.1%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.80 W/kg



0 dB = 8.80 W/kg = 9.44 dBW/kg

Date: 2020-08-01

Test Laboratory: KCTL Inc.

File Name: [2450 MHz Verification Input Power 100 mW 2020-08-01.da5:0](#)**DUT: Dipole 2450 MHz D2450V2, Type: D2450V2, Serial: D2450V2 - SN:892**

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2450$ MHz; $\sigma = 1.766$ S/m; $\epsilon_r = 39.776$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928; ConvF(7.33, 7.33, 7.33) @ 2450 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -3; Type: QD OVA 002 AA; Serial: 1173
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/2450 MHz Verification Input Power 100 mW 2020-08-01/Area Scan (9x12x1):

Measurement grid: dx=12mm, dy=12mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.28 W/kg

Configuration/2450 MHz Verification Input Power 100 mW 2020-08-01/Zoom Scan**(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 65.83 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 11.5 W/kg

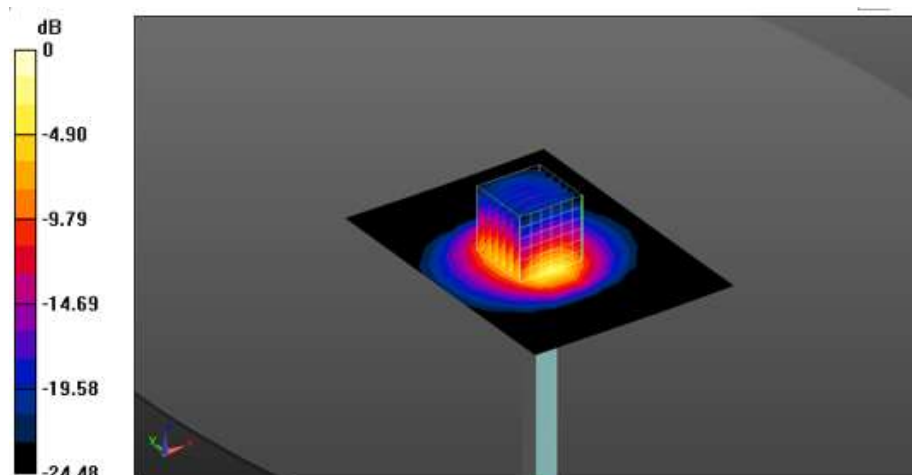
SAR(1 g) = 5.15 W/kg; SAR(10 g) = 2.31 W/kg

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 44.1%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 8.98 W/kg



0 dB = 8.98 W/kg = 9.53 dBW/kg

Date: 2020-08-01

Test Laboratory: KCTL Inc.

File Name: [2450 MHz Verification Input Power 100 mW 2020-08-01-2.da5:0](#)**DUT: Dipole 2450 MHz D2450V2, Type: D2450V2, Serial: D2450V2 - SN:892**Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2450$ MHz; $\sigma = 1.78$ S/m; $\epsilon_r = 39.677$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928; ConvF(7.33, 7.33, 7.33) @ 2450 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: Twin-SAM V4.0 -1; Type: QD 000 P40 CC; Serial: 1363
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/2450 MHz Verification Input Power 100 mW 2020-08-01/Area Scan (9x12x1):

Measurement grid: dx=12mm, dy=12mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 6.43 W/kg

Configuration/2450 MHz Verification Input Power 100 mW 2020-08-01/Zoom Scan**(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 65.65 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 11.9 W/kg

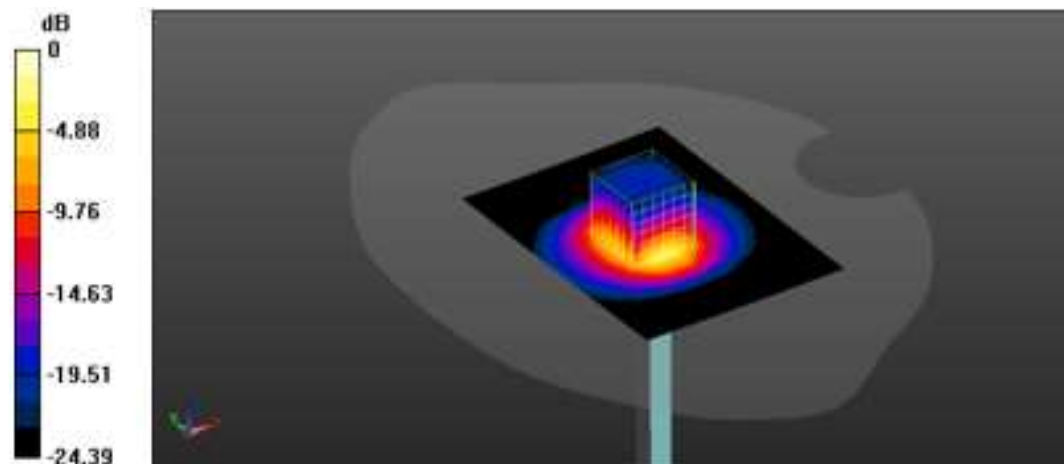
SAR(1 g) = 5.28 W/kg; SAR(10 g) = 2.36 W/kg

Smallest distance from peaks to all points 3 dB below = 10 mm

Ratio of SAR at M2 to SAR at M1 = 43.3%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 9.27 W/kg



0 dB = 9.27 W/kg = 9.67 dBW/kg

Date: 2020-07-21

Test Laboratory: KCTL Inc.

File Name: [2600 MHz Verification Input Power 100 mW 2020-07-21.da5:0](#)**DUT: Dipole 2600 MHz D2600V2, Type: D2600V2, Serial: D2600V2 - SN:1003**Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2600$ MHz; $\sigma = 1.966$ S/m; $\epsilon_r = 38.329$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928; ConvF(7.14, 7.14, 7.14) @ 2600 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -3; Type: QD OVA 002 AA; Serial: 1173
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/2600 MHz Verification Input Power 100 mW 2020-07-21/Area Scan (10x11x1):

Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 9.52 W/kg

Configuration/2600 MHz Verification Input Power 100 mW 2020-07-21/Zoom Scan**(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 74.57 V/m; Power Drift = 0.14 dB

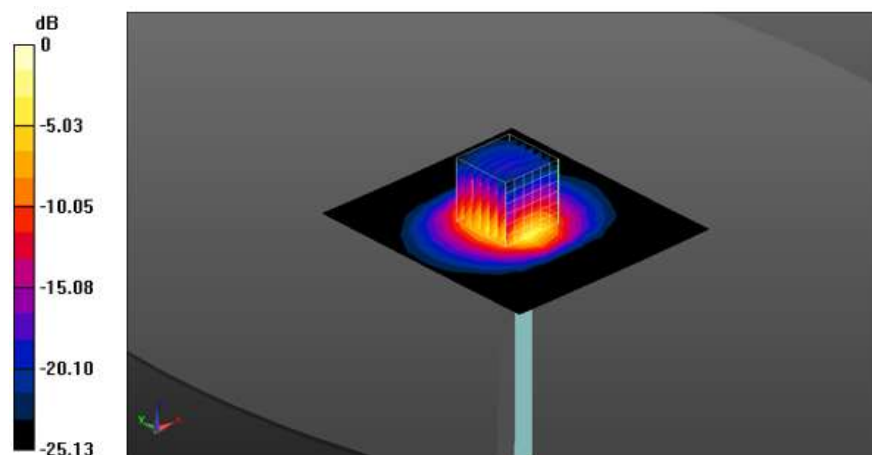
Peak SAR (extrapolated) = 13.7 W/kg

SAR(1 g) = 6.05 W/kg; SAR(10 g) = 2.64 W/kg

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 43.7%

Maximum value of SAR (measured) = 10.7 W/kg



0 dB = 10.7 W/kg = 10.29 dBW/kg

Date: 2020-07-21

Test Laboratory: KCTL Inc.

File Name: [2600 MHz Verification Input Power 100 mW 2020-07-21 2.da5:0](#)**DUT: Dipole 2600 MHz D2600V2, Type: D2600V2, Serial: D2600V2 - SN:1003**Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2600$ MHz; $\sigma = 1.985$ S/m; $\epsilon_r = 38.141$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928; ConvF(7.14, 7.14, 7.14) @ 2600 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: Twin-SAM V4.0 -1; Type: QD 000 P40 CC; Serial: 1363
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/2600 MHz Verification Input Power 100 mW 2020-07-21/Area Scan (10x11x1):

Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 10.4 W/kg

Configuration/2600 MHz Verification Input Power 100 mW 2020-07-21/Zoom Scan**(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 75.14 V/m; Power Drift = 0.11 dB

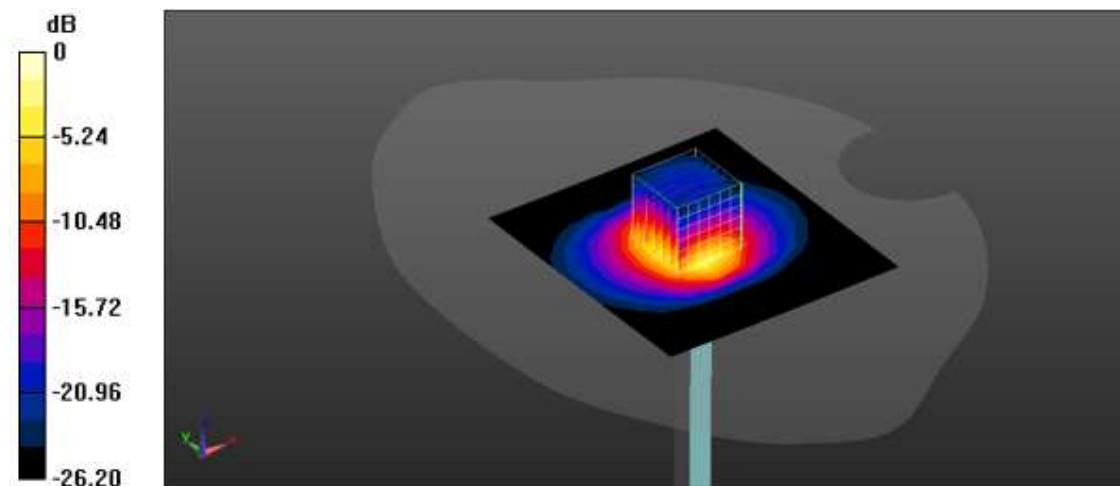
Peak SAR (extrapolated) = 13.9 W/kg

SAR(1 g) = 5.95 W/kg; SAR(10 g) = 2.58 W/kg

Smallest distance from peaks to all points 3 dB below = 9.8 mm

Ratio of SAR at M2 to SAR at M1 = 41.7%

Maximum value of SAR (measured) = 10.7 W/kg



0 dB = 10.7 W/kg = 10.29 dBW/kg

Date: 2020-07-30

Test Laboratory: KCTL Inc.

File Name: [2600 MHz Verification Input Power 100 mW 2020-07-30.da5:0](#)**DUT: Dipole 2600 MHz D2600V2, Type: D2600V2, Serial: D2600V2 - SN:1003**Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2600$ MHz; $\sigma = 1.921$ S/m; $\epsilon_r = 38.349$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(7.14, 7.14, 7.14) @ 2600 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -3; Type: QD OVA 002 AA; Serial: 1173
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/2600 MHz Verification Input Power 100 mW 2020-07-30/Area Scan (10x11x1):

Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 9.53 W/kg

Configuration/2600 MHz Verification Input Power 100 mW 2020-07-30/Zoom Scan**(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 76.99 V/m; Power Drift = 0.05 dB

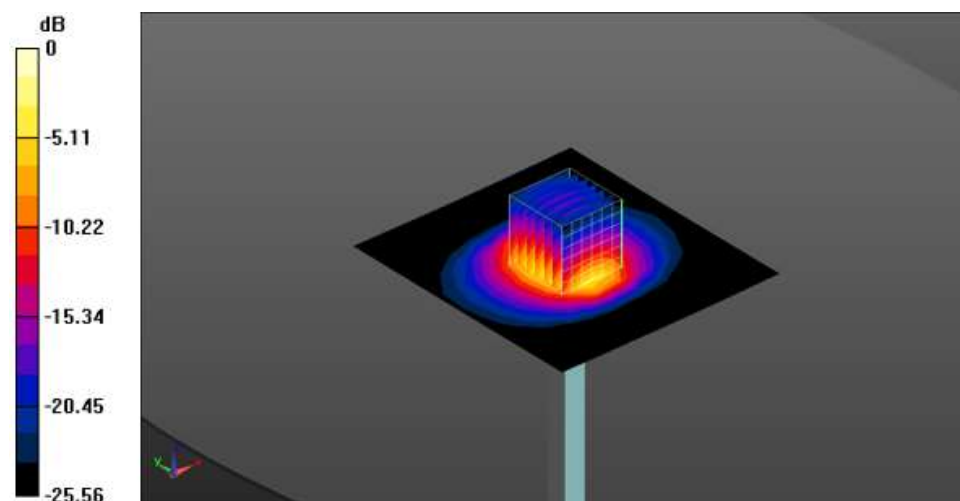
Peak SAR (extrapolated) = 13.8 W/kg

SAR(1 g) = 6.13 W/kg; SAR(10 g) = 2.67 W/kg

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 44.1%

Maximum value of SAR (measured) = 10.7 W/kg



0 dB = 10.7 W/kg = 10.29 dBW/kg

Date: 2020-08-03

Test Laboratory: KCTL Inc.

File Name: [5300 MHz Verification Input Power 100 mW 2020-08-03.da5:0](#)**DUT: Dipole D5GHzV2, Type: D5GHzV2, Serial: D5GHzV2 - SN:1134**

Communication System: UID 0, CW (0); Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5300$ MHz; $\sigma = 4.859$ S/m; $\epsilon_r = 35.219$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(4.94, 4.94, 4.94) @ 5300 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -2; Type: QD OVA 002 BB; Serial: 1220
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/5300 MHz Verification Input Power 100 mW 2020-08-03/Area Scan (10x12x1):

Measurement grid: dx=10mm, dy=10mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 11.5 W/kg

Configuration/5300 MHz Verification Input Power 100 mW 2020-08-03/Zoom Scan**(9x9x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 69.10 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 37.0 W/kg

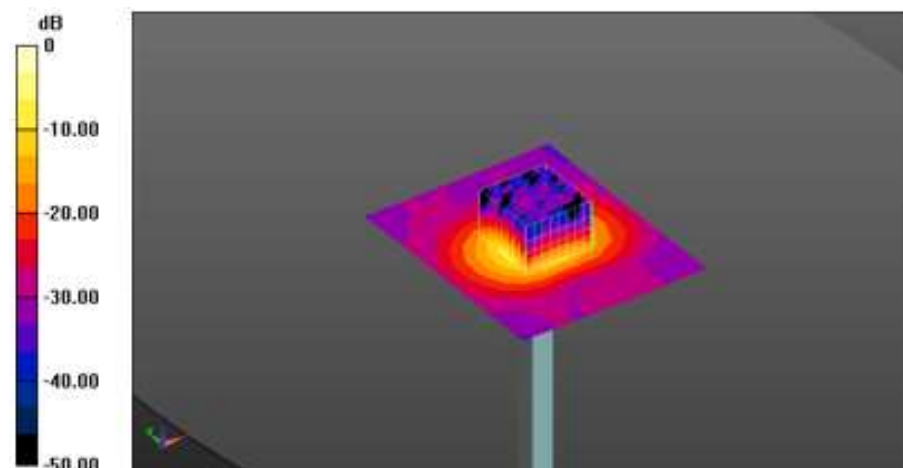
SAR(1 g) = 8.17 W/kg; SAR(10 g) = 2.35 W/kg

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 60.9%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 21.3 W/kg



0 dB = 21.3 W/kg = 13.28 dBW/kg

Date: 2020-08-04

Test Laboratory: KCTL Inc.

File Name: [5600 MHz Verification Input Power 100 mW 2020-08-04.da5:0](#)**DUT: Dipole D5GHzV2, Type: D5GHzV2, Serial: D5GHzV2 - SN:1134**Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5600$ MHz; $\sigma = 5.18$ S/m; $\epsilon_r = 35.035$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928; ConvF(4.69, 4.69, 4.69) @ 5600 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -2; Type: QD OVA 002 BB; Serial: 1220
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/5600 MHz Verification Input Power 100 mW 2020-08-04/Area Scan (10x12x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 12.6 W/kg

Configuration/5600 MHz Verification Input Power 100 mW 2020-08-04/Zoom Scan**(8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 70.10 V/m; Power Drift = 0.17 dB

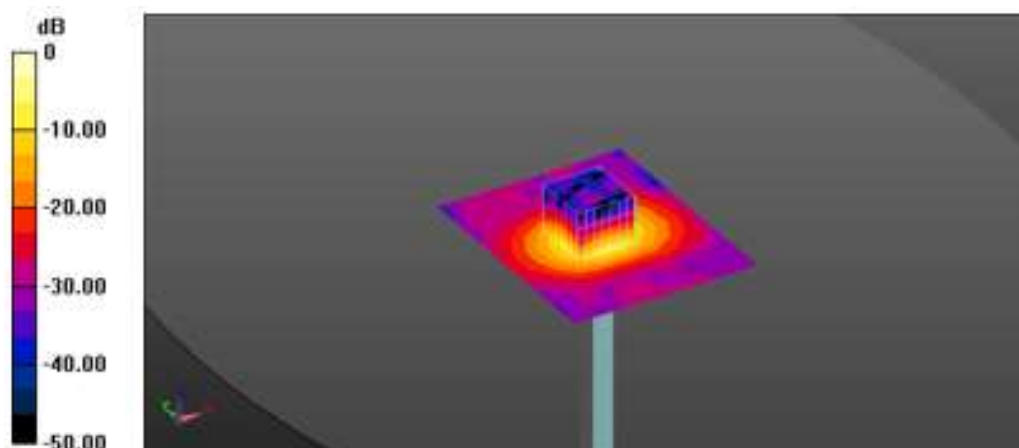
Peak SAR (extrapolated) = 37.5 W/kg

SAR(1 g) = 8.28 W/kg; SAR(10 g) = 2.37 W/kg

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 61.5%

Maximum value of SAR (measured) = 21.7 W/kg



0 dB = 21.7 W/kg = 13.36 dBW/kg

Date: 8/25/2020

Test Laboratory: KCTL Inc.

File Name: [5600 MHz Verification Input Power 100 mW 2020-08-25.da5:0](#)**DUT: Dipole D5GHzV2, Type: D5GHzV2, Serial: D5GHzV2 - SN:1134**Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5600$ MHz; $\sigma = 4.982$ S/m; $\epsilon_r = 34.632$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928; ConvF(4.69, 4.69, 4.69) @ 5600 MHz; ; Calibrated: 1/30/2020
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 1/24/2020
- Phantom: ELI V8.0_Left; Type: QD OVA 004 AA; Serial: 2098
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/5600 MHz Verification Input Power 100 mW 2020-08-25/Area Scan (10x12x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 14.2 W/kg

Configuration/5600 MHz Verification Input Power 100 mW 2020-08-25/Zoom Scan**(8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 72.30 V/m; Power Drift = 0.03 dB

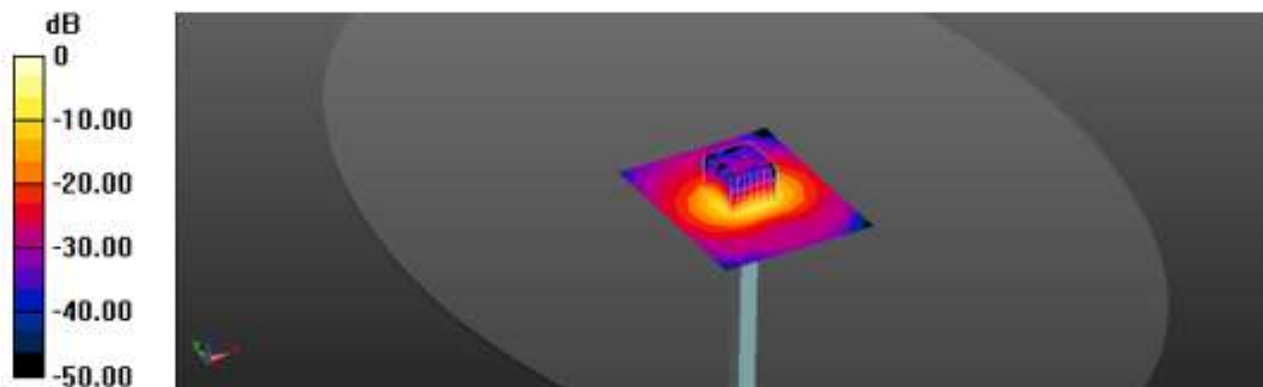
Peak SAR (extrapolated) = 36.6 W/kg

SAR(1 g) = 8.51 W/kg; SAR(10 g) = 2.44 W/kg

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 62.4%

Maximum value of SAR (measured) = 21.8 W/kg



0 dB = 21.8 W/kg = 13.38 dBW/kg

Date: 2020-08-05

Test Laboratory: KCTL Inc.

File Name: [5800 MHz Verification Input Power 100 mW 2020-08-05.da5:0](#)**DUT: Dipole D5GHzV2, Type: D5GHzV2, Serial: D5GHzV2 - SN:1134**Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5800$ MHz; $\sigma = 5.364$ S/m; $\epsilon_r = 34.292$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928; ConvF(4.65, 4.65, 4.65) @ 5800 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -2; Type: QD OVA 002 BB; Serial: 1220
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/5800 MHz Verification Input Power 100 mW 2020-08-05/Area Scan (10x12x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 14.1 W/kg

Configuration/5800 MHz Verification Input Power 100 mW 2020-08-05/Zoom Scan**(8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 73.58 V/m; Power Drift = -0.03 dB

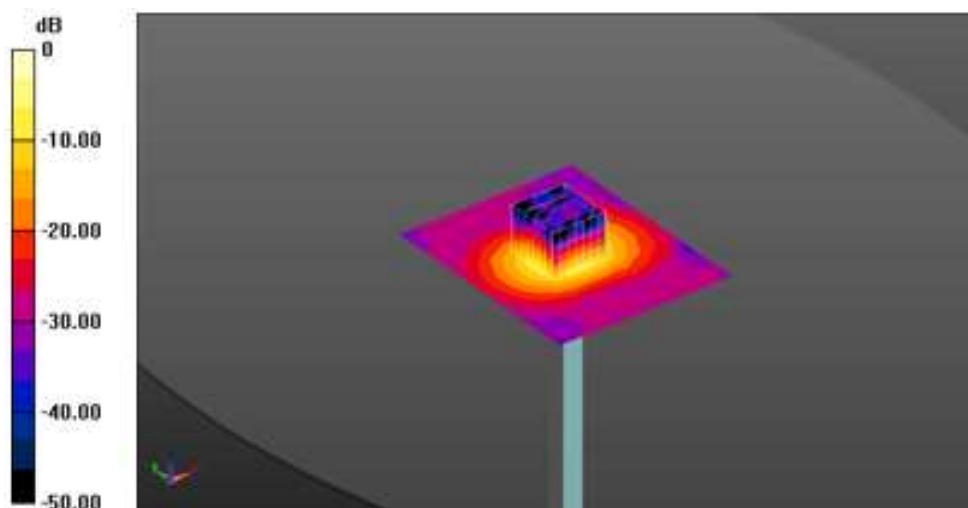
Peak SAR (extrapolated) = 37.1 W/kg

SAR(1 g) = 8.25 W/kg; SAR(10 g) = 2.37 W/kg

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 61.5%

Maximum value of SAR (measured) = 21.3 W/kg



0 dB = 21.3 W/kg = 13.28 dBW/kg

17. Test Results

1)

Date: 2020-08-02

Test Laboratory: KCTL Inc.

File Name: [1.GSM850 Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**Communication System: UID 0, GSM850 (0); Frequency: 836.6 MHz; Duty Cycle: 1:8.30042
Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.892$ S/m; $\epsilon_r = 42.275$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.07, 10.07, 10.07) @ 836.6 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin SN1724; Type: QD000P40CD; Serial: TP:1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/GSM850_Voice_CH190_Left Cheek/Area Scan (9x9x1): Measurement grid:
dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.418 W/kg

Configuration 2/GSM850_Voice_CH190_Left Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.714 V/m; Power Drift = 0.10 dB

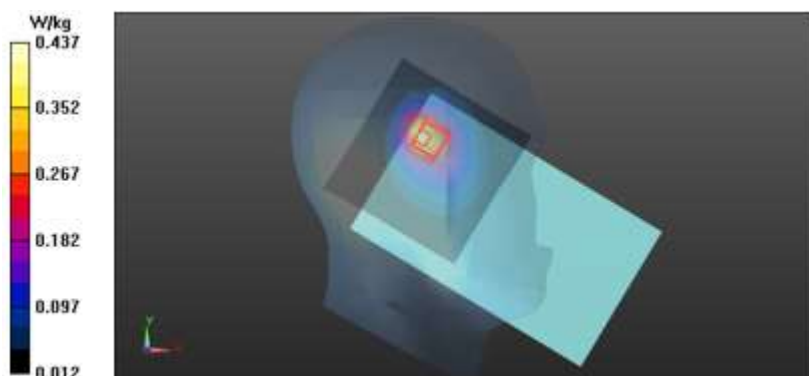
Peak SAR (extrapolated) = 0.551 W/kg

SAR(1 g) = 0.283 W/kg; SAR(10 g) = 0.177 W/kg

Smallest distance from peaks to all points 3 dB below = 11.6 mm

Ratio of SAR at M2 to SAR at M1 = 47%

Maximum value of SAR (measured) = 0.437 W/kg



2)

Date: 2020-07-20

Test Laboratory: KCTL Inc.

File Name: [1.GSM1900 Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**Communication System: UID 0, GSM 1900_2Tx (0); Frequency: 1880 MHz; Duty Cycle:
1:4.14954Medium parameters used: $f = 1880$ MHz; $\sigma = 1.413$ S/m; $\epsilon_r = 40.078$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1880 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin 1728; Type: QD000P40CD; Serial: TP:1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/GSM1900_GPRS 2Tx_CH661_Left Cheek/Area Scan (9x9x1): Measurement
grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.649 W/kg

Configuration 2/GSM1900_GPRS 2Tx_CH661_Left Cheek/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.966 V/m; Power Drift = -0.16 dB

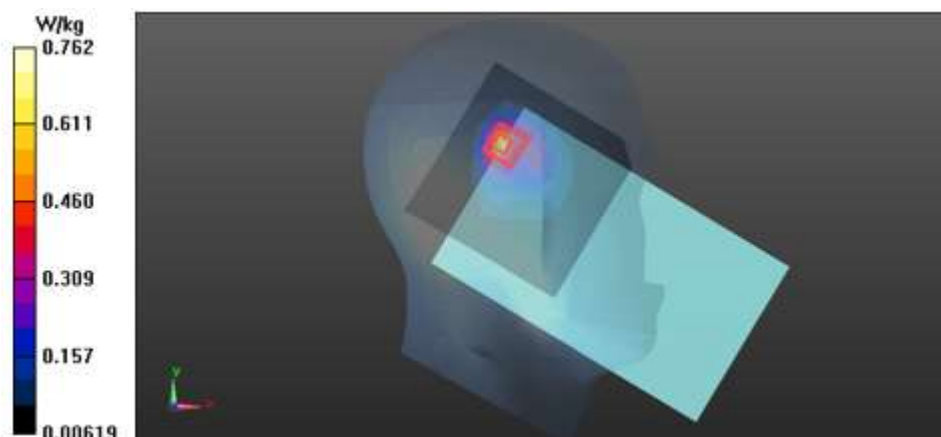
Peak SAR (extrapolated) = 0.933 W/kg

SAR(1 g) = 0.442 W/kg; SAR(10 g) = 0.210 W/kg

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 49.5%

Maximum value of SAR (measured) = 0.762 W/kg



3)

Date: 2020-07-20

Test Laboratory: KCTL Inc.

File Name: [1.WCDMA FDD II Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, W-CDMA 1900 (Band 2) (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.413$ S/m; $\epsilon_r = 40.078$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1880 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin 1728; Type: QD000P40CD; Serial: TP:1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/WCDMA FDD II_CH9400_Left Cheek/Area Scan (9x9x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.539 W/kg

Configuration 2/WCDMA FDD II_CH9400_Left Cheek/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.727 V/m; Power Drift = -0.14 dB

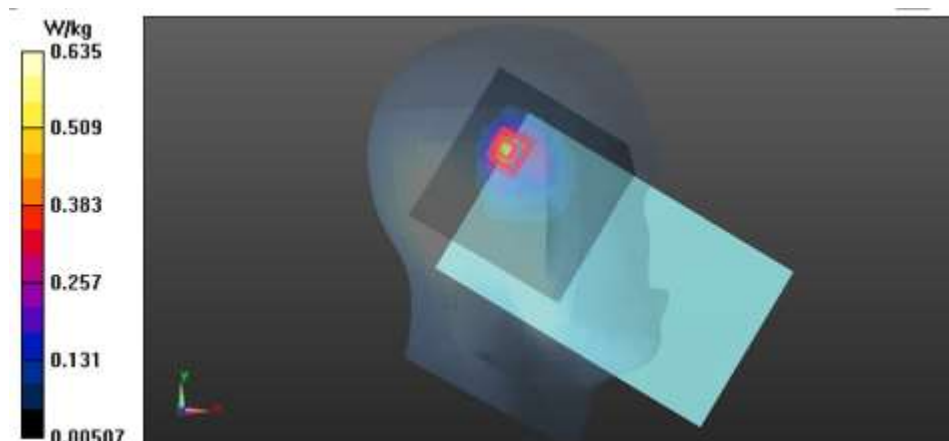
Peak SAR (extrapolated) = 0.777 W/kg

SAR(1 g) = 0.364 W/kg; SAR(10 g) = 0.173 W/kg

Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 48.8%

Maximum value of SAR (measured) = 0.635 W/kg



4)

Date: 2020-07-23

Test Laboratory: KCTL Inc.

File Name: [1.WCDMA FDD IV Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, W-CDMA 1700 (Band4) (0); Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1732.4$ MHz; $\sigma = 1.349$ S/m; $\epsilon_r = 39.603$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(9.01, 9.01, 9.01) @ 1732.4 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin 1728; Type: QD000P40CD; Serial: TP:1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/WCDMA FDD IV_CH1412_Left Cheek Protective Cover/Area Scan (9x9x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.454 W/kg

Configuration 2/WCDMA FDD IV_CH1412_Left Cheek Protective Cover/Zoom Scan**(5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.023 V/m; Power Drift = -0.04 dB

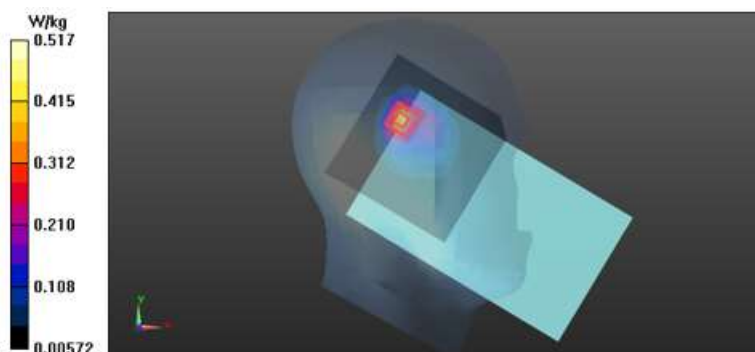
Peak SAR (extrapolated) = 0.620 W/kg

SAR(1 g) = 0.309 W/kg; SAR(10 g) = 0.152 W/kg

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 51%

Maximum value of SAR (measured) = 0.517 W/kg



5)

Date: 2020-08-02

Test Laboratory: KCTL Inc.

File Name: [1.WCDMA FDD V Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, W-CDMA 850 (Band 5) (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.892$ S/m; $\epsilon_r = 42.275$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.07, 10.07, 10.07) @ 836.6 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin SN1724; Type: QD000P40CD; Serial: TP:1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/WCDMA FDD V_CH4183_Left Cheek/Area Scan (9x9x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.640 W/kg

Configuration 2/WCDMA FDD V_CH4183_Left Cheek/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.580 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.863 W/kg

SAR(1 g) = 0.452 W/kg; SAR(10 g) = 0.284 W/kg

Smallest distance from peaks to all points 3 dB below = 13.7 mm

Ratio of SAR at M2 to SAR at M1 = 48.1%

Maximum value of SAR (measured) = 0.690 W/kg



6)

Date: 2020-07-20

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 2 QPSK 20 MHz Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, LTE Band 2 (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.435$ S/m; $\epsilon_r = 40.045$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1900 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin 1728; Type: QD000P40CD; Serial: TP:1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/LTE Band 2_QPSK_20 MHz_50RB_24offset_CH19100_Left Cheek/Area**Scan (9x9x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.609 W/kg

Configuration 2/LTE Band 2_QPSK_20 MHz_50RB_24offset_CH19100_Left Cheek/Zoom**Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.806 V/m; Power Drift = -0.14 dB

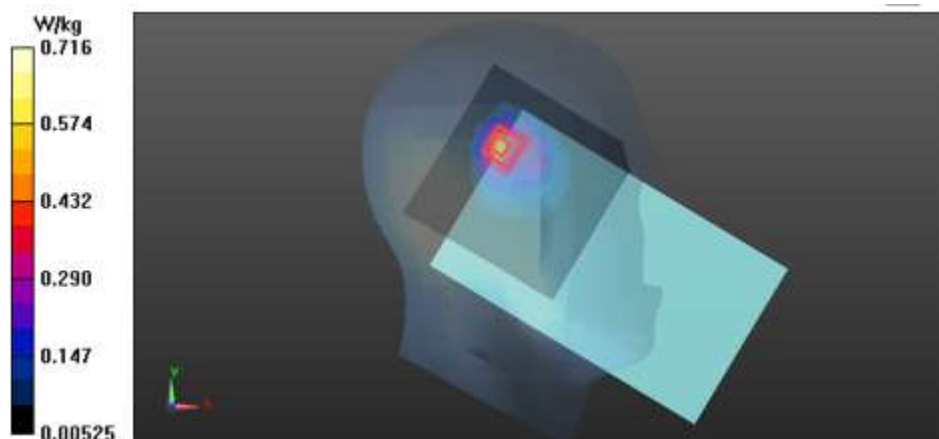
Peak SAR (extrapolated) = 0.889 W/kg

SAR(1 g) = 0.414 W/kg; SAR(10 g) = 0.197 W/kg

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 49.3%

Maximum value of SAR (measured) = 0.716 W/kg



7)

Date: 2020-08-02

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 5 QPSK 10 MHz Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.892$ S/m; $\epsilon_r = 42.254$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.07, 10.07, 10.07) @ 836.5 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin SN1724; Type: QD000P40CD; Serial: TP:1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/LTE Band 5_QPSK_10 MHz_25RB_12offset_CH20525_Left Cheek/Area Scan (9x9x1): Measurement grid: dx=15mm, dy=15mmInfo: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.731 W/kg

Configuration 2/LTE Band 5_QPSK_10 MHz_25RB_12offset_CH20525_Left Cheek/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.102 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.979 W/kg

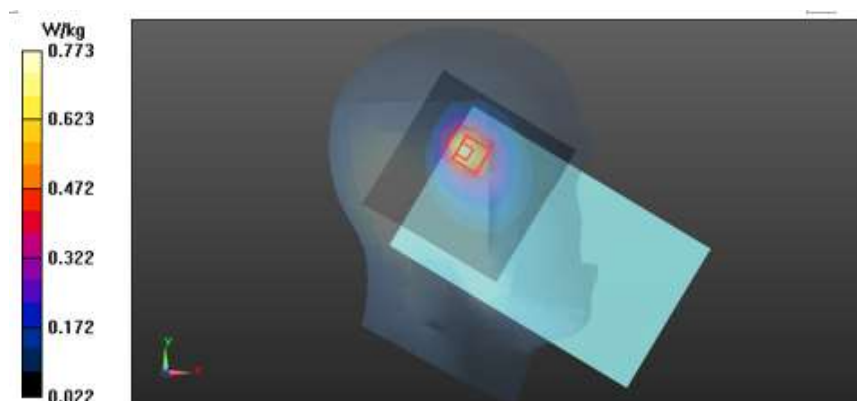
SAR(1 g) = 0.516 W/kg; SAR(10 g) = 0.323 W/kg

Smallest distance from peaks to all points 3 dB below = 12.6 mm

Ratio of SAR at M2 to SAR at M1 = 48.2%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.773 W/kg



8)

Date: 2020-07-25

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 12 QPSK 10 MHz Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 707.5$ MHz; $\sigma = 0.882$ S/m; $\epsilon_r = 42.18$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.45, 10.45, 10.45) @ 707.5 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin SN1724; Type: QD000P40CD; Serial: TP:1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/LTE Band 12_QPSK_10 MHz_1RB_25offset_CH23095_Left Cheek/Area**Scan (9x9x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.721 W/kg

Configuration 2/LTE Band 12_QPSK_10 MHz_1RB_25offset_CH23095_Left Cheek/Zoom**Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.918 V/m; Power Drift = -0.11 dB

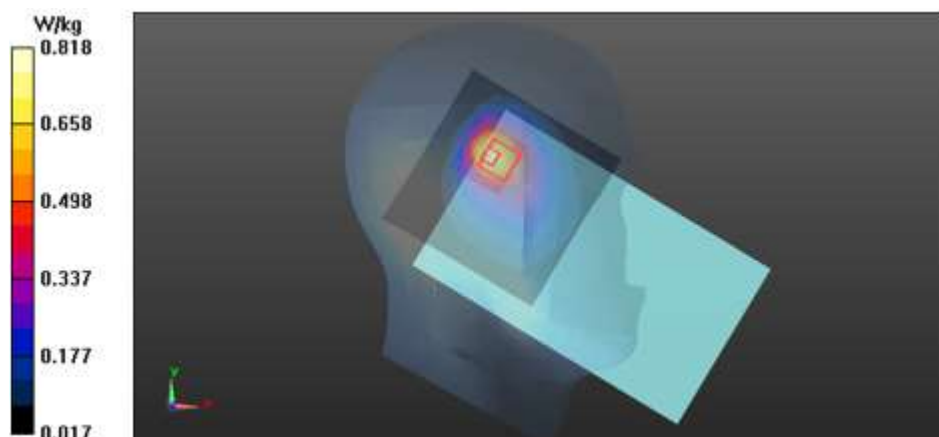
Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.556 W/kg; SAR(10 g) = 0.355 W/kg

Smallest distance from peaks to all points 3 dB below = 10.1 mm

Ratio of SAR at M2 to SAR at M1 = 49.7%

Maximum value of SAR (measured) = 0.818 W/kg



9)

Date: 2020-07-25

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 13 QPSK 10 MHz Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 782$ MHz; $\sigma = 0.921$ S/m; $\epsilon_r = 42.868$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.45, 10.45, 10.45) @ 782 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin SN1724; Type: QD000P40CD; Serial: TP:1724
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/LTE Band 13_QPSK_10 MHz_25RB_12offset_CH23230_Left Cheek/Area Scan (9x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.902 W/kg**Configuration 2/LTE Band 13_QPSK_10 MHz_25RB_12offset_CH23230_Left Cheek/Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.820 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.25 W/kg

SAR(1 g) = 0.672 W/kg; SAR(10 g) = 0.430 W/kg

Smallest distance from peaks to all points 3 dB below = 11.4 mm

Ratio of SAR at M2 to SAR at M1 = 51.3%

Maximum value of SAR (measured) = 0.966 W/kg



10)

Date: 2020-07-21

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 41 QPSK 20 MHz Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG5X**Communication System: UID 0, LTE Band 41 (0); Frequency: 2593 MHz; Duty Cycle: 1:1.58016
Medium parameters used (interpolated): $f = 2593$ MHz; $\sigma = 1.979$ S/m; $\epsilon_r = 38.161$; $\rho = 1000$ kg/m³
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(7.14, 7.14, 7.14) @ 2593 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: Twin-SAM V4.0 -1; Type: QD 000 P40 CC; Serial: 1363
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/LTE Band 41_QPSK_20 MHz_50RB_24offset_CH40620_Left Cheek/Area Scan (10x10x1): Measurement grid: dx=12mm, dy=12mm[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.885 W/kg

Configuration 2/LTE Band 41_QPSK_20 MHz_50RB_24offset_CH40620_Left Cheek/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 23.74 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 1.51 W/kg

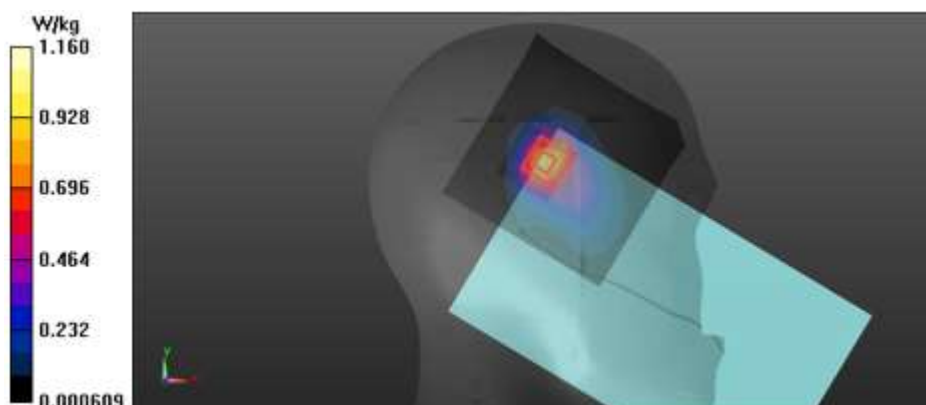
SAR(1 g) = 0.663 W/kg; SAR(10 g) = 0.295 W/kg

Smallest distance from peaks to all points 3 dB below = 9.2 mm

Ratio of SAR at M2 to SAR at M1 = 43.8%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.16 W/kg



11)

Date: 2020-07-23

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 66 QPSK 20 MHz Head.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, LTE Band 66 (0); Frequency: 1720 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1720$ MHz; $\sigma = 1.338$ S/m; $\epsilon_r = 39.645$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(9.01, 9.01, 9.01) @ 1720 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: SAM twin 1728; Type: QD000P40CD; Serial: TP:1728
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/LTE Band 66_QPSK_20 MHz_1RB_0offset_CH132072_Left Cheek Protective Cover/Area Scan (9x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.415 W/kg**Configuration 2/LTE Band 66_QPSK_20 MHz_1RB_0offset_CH132072_Left Cheek Protective Cover/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.119 V/m; Power Drift = 0.06 dB

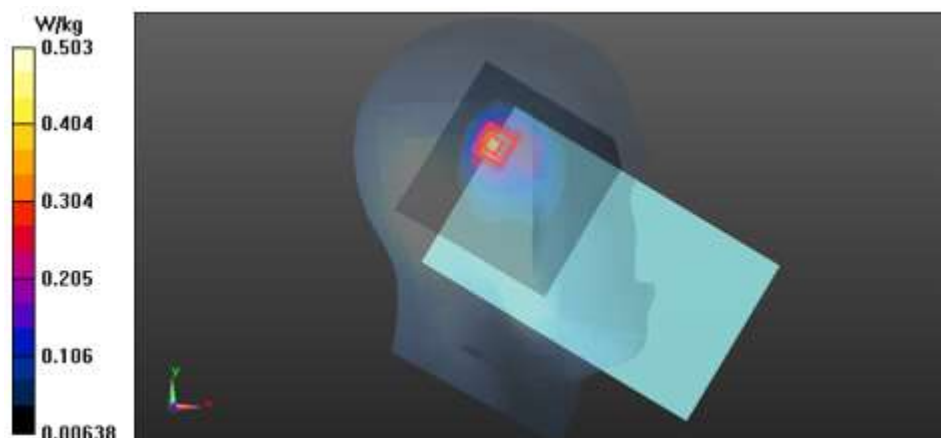
Peak SAR (extrapolated) = 0.616 W/kg

SAR(1 g) = 0.313 W/kg; SAR(10 g) = 0.157 W/kg

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 53.7%

Maximum value of SAR (measured) = 0.503 W/kg



12)

Date: 2020-08-01

Test Laboratory: KCTL Inc.

File Name: [2.Bluetooth_GFSK_DH5_Head.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N60119CT**

Communication System: UID 0, Bluetooth (0); Frequency: 2441 MHz; Duty Cycle: 1:1.30167
Medium parameters used (interpolated): $f = 2441$ MHz; $\sigma = 1.774$ S/m; $\epsilon_r = 39.701$; $\rho = 1000$ kg/m³
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(7.33, 7.33, 7.33) @ 2441 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: Twin-SAM V4.0 -1; Type: QD 000 P40 CC; Serial: 1363
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/Bluetooth_GFSK_DH5_Ant.1_CH39_Right Cheek/Area Scan (10x10x1):

Measurement grid: dx=12mm, dy=12mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.110 W/kg

Configuration/Bluetooth_GFSK_DH5_Ant.1_CH39_Right Cheek/Zoom Scan (8x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.036 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.144 W/kg

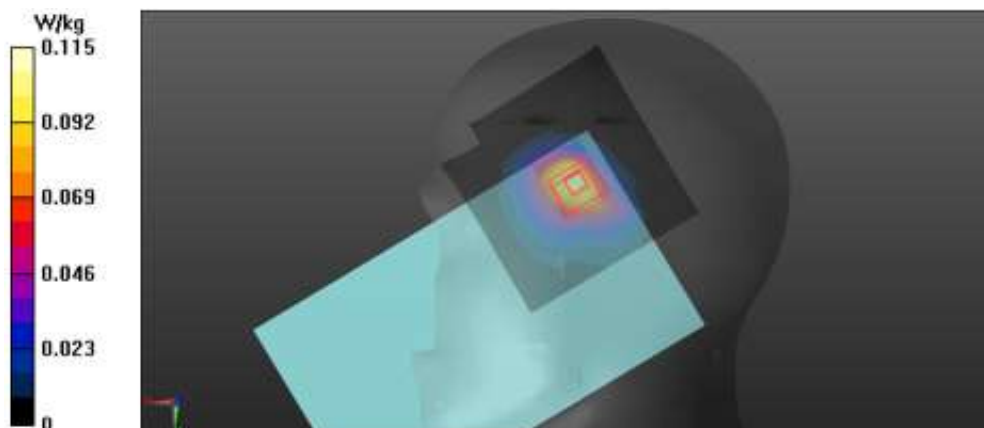
SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.038 W/kg

Smallest distance from peaks to all points 3 dB below = 12.1 mm

Ratio of SAR at M2 to SAR at M1 = 53.4%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.115 W/kg



13)

Date: 2020-07-27

Test Laboratory: KCTL Inc.

File Name: [1.GSM850 Body Sensor Off.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG5X**

Communication System: UID 0, GSM850 (0); Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.902$ S/m; $\epsilon_r = 40.933$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.07, 10.07, 10.07) @ 836.6 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/GSM850_GPRS 1Tx_CH190_Rear_19 mm/Area Scan (9x9x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.532 W/kg

Configuration/GSM850_GPRS 1Tx_CH190_Rear_19 mm/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.66 V/m; Power Drift = -0.13 dB

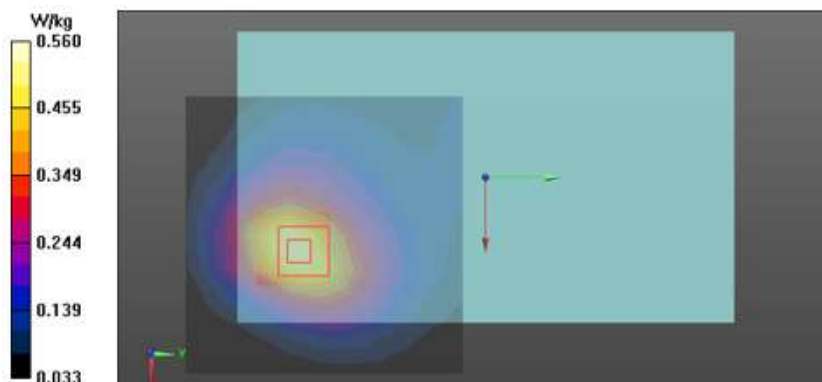
Peak SAR (extrapolated) = 0.626 W/kg

SAR(1 g) = 0.428 W/kg; SAR(10 g) = 0.290 W/kg

Smallest distance from peaks to all points 3 dB below = 21.5 mm

Ratio of SAR at M2 to SAR at M1 = 67.9%

Maximum value of SAR (measured) = 0.560 W/kg



14)

Date: 2020-08-05

Test Laboratory: KCTL Inc.

File Name: [1.GSM1900 Body Sensor On.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**Communication System: UID 0, GSM 1900_2Tx (0); Frequency: 1880 MHz; Duty Cycle:
1:4.14954Medium parameters used: $f = 1880$ MHz; $\sigma = 1.4$ S/m; $\epsilon_r = 39.97$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1880 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/GSM1900_GPRS 2Tx_CH661_Rear_0 mm Grip Sensor On/Area Scan (8x8x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.581 W/kg

Configuration/GSM1900_GPRS 2Tx_CH661_Rear_0 mm Grip Sensor On/Zoom Scan**(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.84 V/m; Power Drift = -0.07 dB

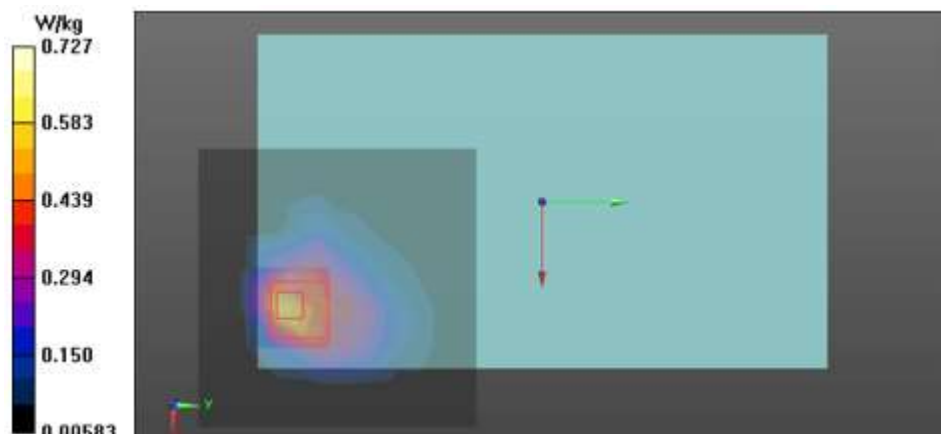
Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.403 W/kg; SAR(10 g) = 0.207 W/kg

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 34.2%

Maximum value of SAR (measured) = 0.727 W/kg



15)

Date: 2020-07-21

Test Laboratory: KCTL Inc.

File Name: [1.WCDMA FDD II Body Sensor Off.da53:2](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, W-CDMA 1900 (Band 2) (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.403$ S/m; $\epsilon_r = 39.875$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1880 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 3/WCDMA FDD II_CH9400_Top_14 mm/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.756 W/kg

Configuration 3/WCDMA FDD II_CH9400_Top_14 mm/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.75 V/m; Power Drift = 0.10 dB

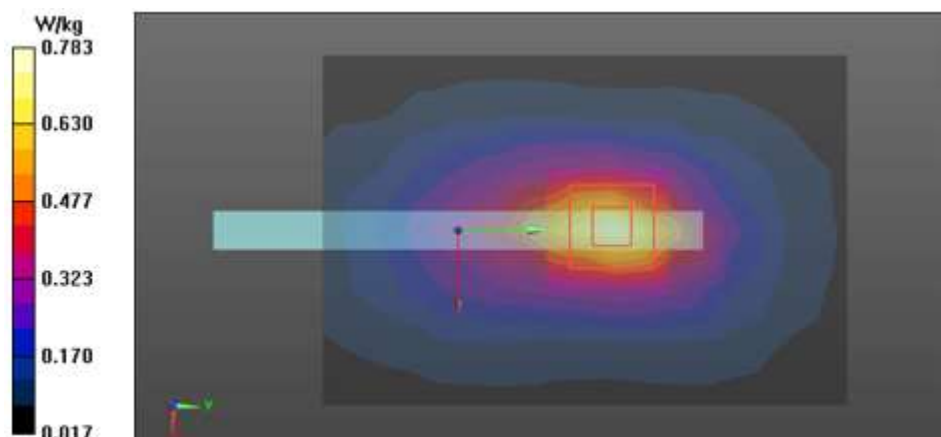
Peak SAR (extrapolated) = 0.935 W/kg

SAR(1 g) = 0.524 W/kg; SAR(10 g) = 0.293 W/kg

Smallest distance from peaks to all points 3 dB below = 14.4 mm

Ratio of SAR at M2 to SAR at M1 = 56.1%

Maximum value of SAR (measured) = 0.783 W/kg



16)

Date: 2020-07-17

Test Laboratory: KCTL Inc.

File Name: [1.WCDMA FDD IV Body Sensor On.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, W-CDMA 1700 (Band4) (0); Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1732.4$ MHz; $\sigma = 1.35$ S/m; $\epsilon_r = 39.218$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(9.01, 9.01, 9.01) @ 1732.4 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/WCDMA FDD IV_CH1412_Rear_0 mm Grip Sensor On/Area Scan (8x8x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.827 W/kg

Configuration/WCDMA FDD IV_CH1412_Rear_0 mm Grip Sensor On/Zoom Scan**(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.00 V/m; Power Drift = -0.04 dB

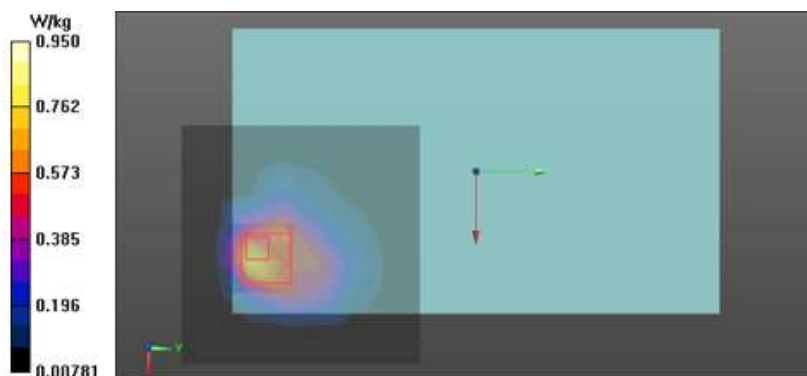
Peak SAR (extrapolated) = 1.38 W/kg

SAR(1 g) = 0.527 W/kg; SAR(10 g) = 0.272 W/kg

Smallest distance from peaks to all points 3 dB below = 6.3 mm

Ratio of SAR at M2 to SAR at M1 = 37.9%

Maximum value of SAR (measured) = 0.950 W/kg



17)

Date: 2020-07-26

Test Laboratory: KCTL Inc.

File Name: [1.WCDMA FDD V Body Sensor On.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG5X**

Communication System: UID 0, W-CDMA 850 (Band 5) (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.92$ S/m; $\epsilon_r = 41.476$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.07, 10.07, 10.07) @ 836.6 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/WCDMA FDD V_CH4183_Rear_0 mm Grip Sensor On/Area Scan (8x8x1):

Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.704 W/kg

Configuration/WCDMA FDD V_CH4183_Rear_0 mm Grip Sensor On/Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.90 V/m; Power Drift = 0.09 dB

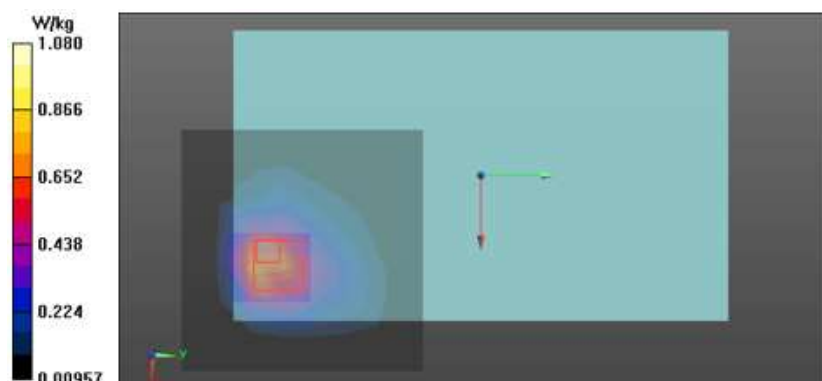
Peak SAR (extrapolated) = 1.74 W/kg

SAR(1 g) = 0.571 W/kg; SAR(10 g) = 0.295 W/kg

Smallest distance from peaks to all points 3 dB below = 7.1 mm

Ratio of SAR at M2 to SAR at M1 = 33.7%

Maximum value of SAR (measured) = 1.08 W/kg



18)

Date: 2020-07-21

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 2 QPSK 20 MHz Body Sensor Off.da53:2](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, LTE Band 2 (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.424$ S/m; $\epsilon_r = 39.833$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(8.56, 8.56, 8.56) @ 1900 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 3/LTE Band 2_QPSK_20 MHz_1RB_49offset_CH19100_Top_14 mm/Area Scan**(7x10x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.850 W/kg

Configuration 3/LTE Band 2_QPSK_20 MHz_1RB_49offset_CH19100_Top_14 mm/Zoom**Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.85 V/m; Power Drift = -0.05 dB

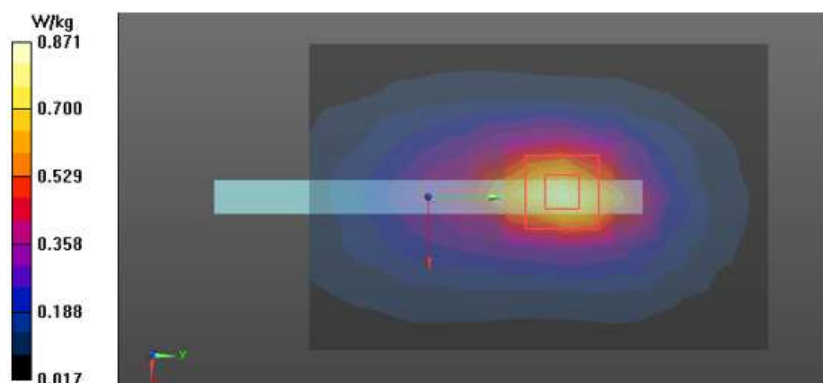
Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.584 W/kg; SAR(10 g) = 0.324 W/kg

Smallest distance from peaks to all points 3 dB below = 14.4 mm

Ratio of SAR at M2 to SAR at M1 = 56.5%

Maximum value of SAR (measured) = 0.871 W/kg



19)

Date: 2020-08-03

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 5 QPSK 10 MHz Body Sensor On.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.906$ S/m; $\epsilon_r = 40.63$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.07, 10.07, 10.07) @ 836.5 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/LTE Band 5_QPSK_10 MHz_25RB_12offset_CH20525_Rear_0 mm Grip Sensor On/Area Scan (8x8x1): Measurement grid: dx=15mm, dy=15mmInfo: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.585 W/kg

Configuration/LTE Band 5_QPSK_10 MHz_25RB_12offset_CH20525_Rear_0 mm Grip Sensor On/Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 30.86 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.68 W/kg

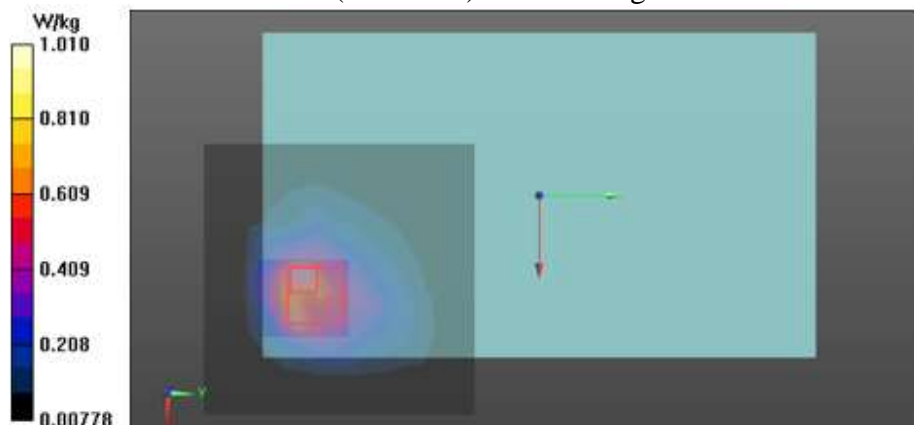
SAR(1 g) = 0.532 W/kg; SAR(10 g) = 0.275 W/kg

Smallest distance from peaks to all points 3 dB below = 7.3 mm

Ratio of SAR at M2 to SAR at M1 = 32.5%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.01 W/kg



20)

Date: 2020-08-04

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 12 QPSK 10 MHz Body Sensor On.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 707.5$ MHz; $\sigma = 0.868$ S/m; $\epsilon_r = 42.293$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.45, 10.45, 10.45) @ 707.5 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/LTE Band 12_QPSK_10 MHz_1RB_25offset_CH23095_Rear_0 mm Grip Sensor On/Area Scan (8x8x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.440 W/kg

Configuration/LTE Band 12_QPSK_10 MHz_1RB_25offset_CH23095_Rear_0 mm Grip Sensor On/Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 29.06 V/m; Power Drift = 0.02 dB

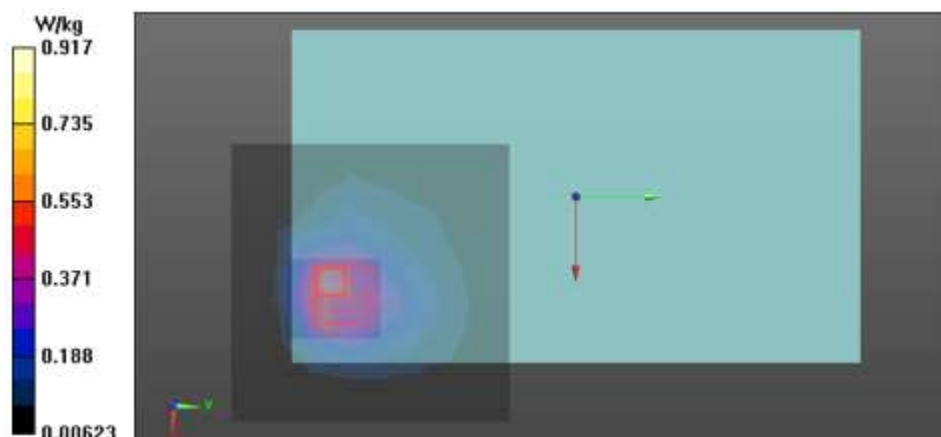
Peak SAR (extrapolated) = 1.45 W/kg

SAR(1 g) = 0.432 W/kg; SAR(10 g) = 0.210 W/kg

Smallest distance from peaks to all points 3 dB below = 7.6 mm

Ratio of SAR at M2 to SAR at M1 = 30.1%

Maximum value of SAR (measured) = 0.917 W/kg



21)

Date: 2020-08-04

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 13 QPSK 10 MHz Body Sensor On.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 782 \text{ MHz}$; $\sigma = 0.911 \text{ S/m}$; $\epsilon_r = 40.731$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(10.45, 10.45, 10.45) @ 782 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/LTE Band 13_QPSK_10 MHz_25RB_12offset_CH23230_Rear_0 mm Grip**Sensor On/Area Scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.476 W/kg

Configuration/LTE Band 13_QPSK_10 MHz_25RB_12offset_CH23230_Rear_0 mm Grip**Sensor On/Zoom Scan (7x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.05 V/m; Power Drift = 0.08 dB

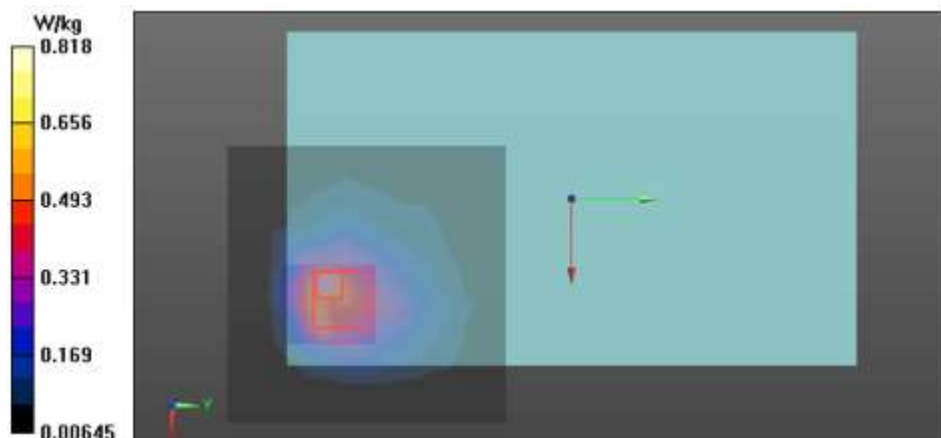
Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.433 W/kg; SAR(10 g) = 0.225 W/kg

Smallest distance from peaks to all points 3 dB below = 7.3 mm

Ratio of SAR at M2 to SAR at M1 = 33.5%

Maximum value of SAR (measured) = 0.818 W/kg



22)

Date: 2020-07-30

Test Laboratory: KCTL Inc.

File Name: [2.LTE Band 41 QPSK 20 MHz Body Sensor On.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG5X**Communication System: UID 0, LTE Band 41 (0); Frequency: 2506 MHz; Duty Cycle: 1:1.58016
Medium parameters used (interpolated): $f = 2506$ MHz; $\sigma = 1.831$ S/m; $\epsilon_r = 38.67$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(7.14, 7.14, 7.14) @ 2506 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -3; Type: QD OVA 002 AA; Serial: 1173
- Measurement SW: DASY52, Version 52.10 (4);

**Configuration/LTE Band 41_QPSK_20 MHz_1RB_99offset_CH39750_Rear_0 mm Grip
Sensor On/Area Scan (9x9x1):** Measurement grid: dx=12mm, dy=12mmInfo: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.717 W/kg

**Configuration/LTE Band 41_QPSK_20 MHz_1RB_99offset_CH39750_Rear_0 mm Grip
Sensor On/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.95 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.24 W/kg

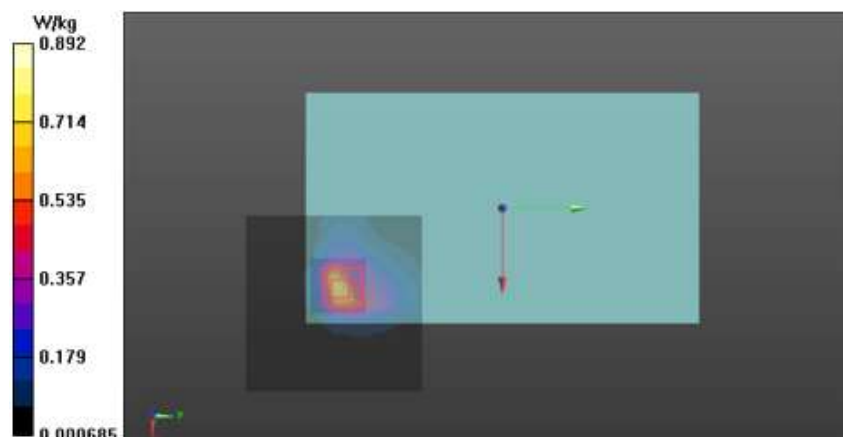
SAR(1 g) = 0.486 W/kg; SAR(10 g) = 0.200 W/kg

Smallest distance from peaks to all points 3 dB below = 6.3 mm

Ratio of SAR at M2 to SAR at M1 = 40.3%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.892 W/kg



23)

Date: 2020-07-17

Test Laboratory: KCTL Inc.

File Name: [1.LTE Band 66 QPSK 20 MHz Body Sensor On.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N400KG3V**

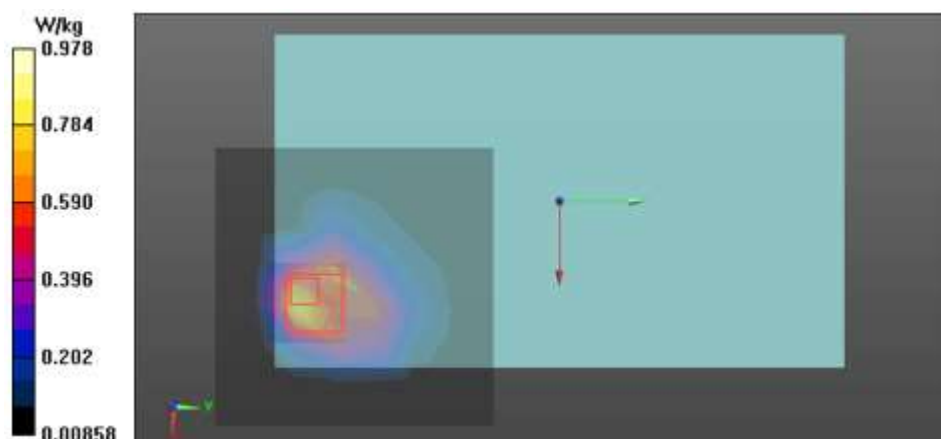
Communication System: UID 0, LTE Band 66 (0); Frequency: 1720 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1720$ MHz; $\sigma = 1.338$ S/m; $\epsilon_r = 39.251$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3865; ConvF(9.01, 9.01, 9.01) @ 1720 MHz; ; Calibrated: 2019-08-28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1586; Calibrated: 2020-04-22
- Phantom: ELI v5.0 sn1178; Type: QDOVA002AA; Serial: TP:1178
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/LTE Band 66_QPSK_20 MHz_1RB_49offset_CH132072_Rear_0 mm Grip Sensor On/Area Scan (8x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.844 W/kg

Configuration/LTE Band 66_QPSK_20 MHz_1RB_49offset_CH132072_Rear_0 mm Grip Sensor On/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.21 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.541 W/kg; SAR(10 g) = 0.275 W/kg
Smallest distance from peaks to all points 3 dB below = 6.3 mm
Ratio of SAR at M2 to SAR at M1 = 38.6%
Maximum value of SAR (measured) = 0.978 W/kg



24)

Date: 2020-07-31

Test Laboratory: KCTL Inc.

File Name: [1.2.4G 802.11 Body.da53:1](#)**DUT: SM-T575, Type: Tablet, Serial: 2c900426c849f110**

Communication System: UID 0, 2.4GWLAN (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412$ MHz; $\sigma = 1.732$ S/m; $\epsilon_r = 38.926$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(7.33, 7.33, 7.33) @ 2412 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -3; Type: QD OVA 002 AA; Serial: 1173
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 2/802.11 b_Ant.1_CH1_Left_5 mm Grip Sensor Off/Area Scan (8x10x1):

Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.295 W/kg

Configuration 2/802.11 b_Ant.1_CH1_Left_5 mm Grip Sensor Off/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.68 V/m; Power Drift = -0.09 dB

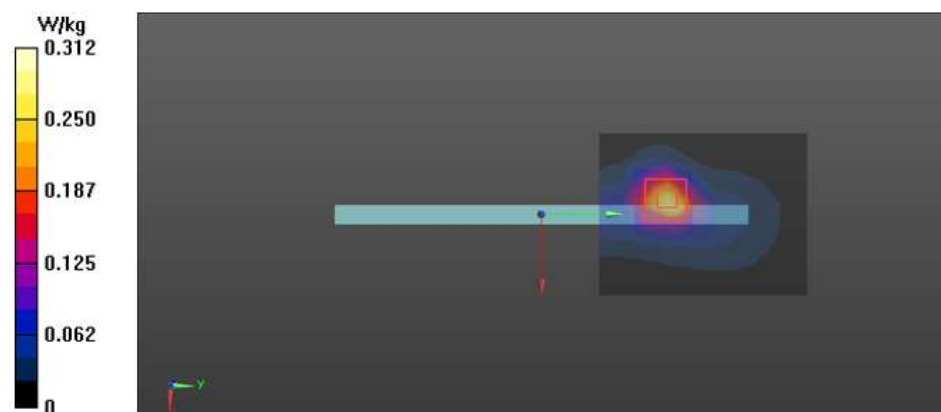
Peak SAR (extrapolated) = 0.400 W/kg

SAR(1 g) = 0.182 W/kg; SAR(10 g) = 0.083 W/kg

Smallest distance from peaks to all points 3 dB below = 10.8 mm

Ratio of SAR at M2 to SAR at M1 = 45.3%

Maximum value of SAR (measured) = 0.312 W/kg



25)

Date: 2020-07-31

Test Laboratory: KCTL Inc.

File Name: [1.2.4G 802.11 Body.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: 2c900426c849f110**

Communication System: UID 0, 2.4GWLAN (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412$ MHz; $\sigma = 1.732$ S/m; $\epsilon_r = 38.926$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(7.33, 7.33, 7.33) @ 2412 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -3; Type: QD OVA 002 AA; Serial: 1173
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/802.11 b_Ant.2_CH1_Rear_12 mm Grip Sensor Off/Area Scan (10x10x1):

Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.458 W/kg

Configuration/802.11 b_Ant.2_CH1_Rear_12 mm Grip Sensor Off/Zoom Scan (9x9x7)/Cube 0:

Measurement grid: dx=4mm, dy=4mm, dz=5mm

Reference Value = 16.45 V/m; Power Drift = 0.18 dB

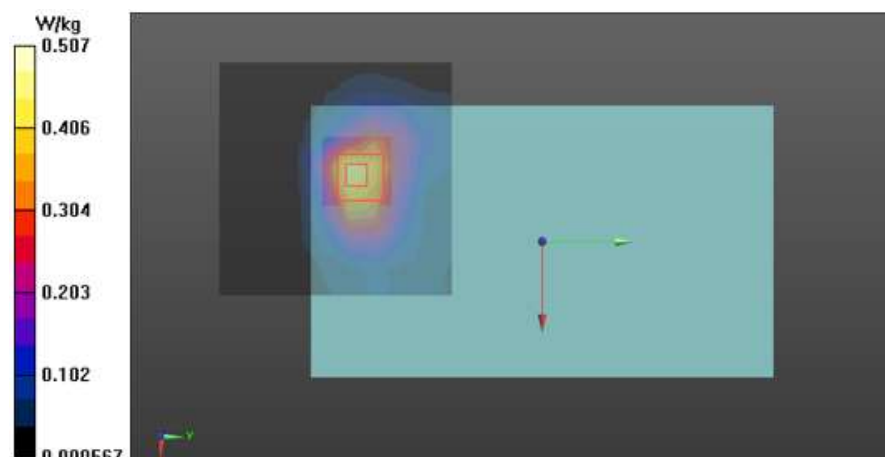
Peak SAR (extrapolated) = 0.648 W/kg

SAR(1 g) = 0.306 W/kg; SAR(10 g) = 0.156 W/kg

Smallest distance from peaks to all points 3 dB below = 12.5 mm

Ratio of SAR at M2 to SAR at M1 = 46.5%

Maximum value of SAR (measured) = 0.507 W/kg



26)

Date: 2020-08-03

Test Laboratory: KCTL Inc.

File Name: [1.5.3G 802.11 Body.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: 2c900426c849f110**

Communication System: UID 0, 5GWLAN (0); Frequency: 5260 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5260$ MHz; $\sigma = 4.821$ S/m; $\epsilon_r = 35.252$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(4.94, 4.94, 4.94) @ 5260 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -2; Type: QD OVA 002 BB; Serial: 1220
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/802.11 a_Ant.1_CH52_Rear_12 mm Grip Sensor Off/Area Scan (11x11x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.859 W/kg

Configuration/802.11 a_Ant.1_CH52_Rear_12 mm Grip Sensor Off/Zoom Scan (7x7x7)/Cube

0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 6.701 V/m; Power Drift = 0.14 dB

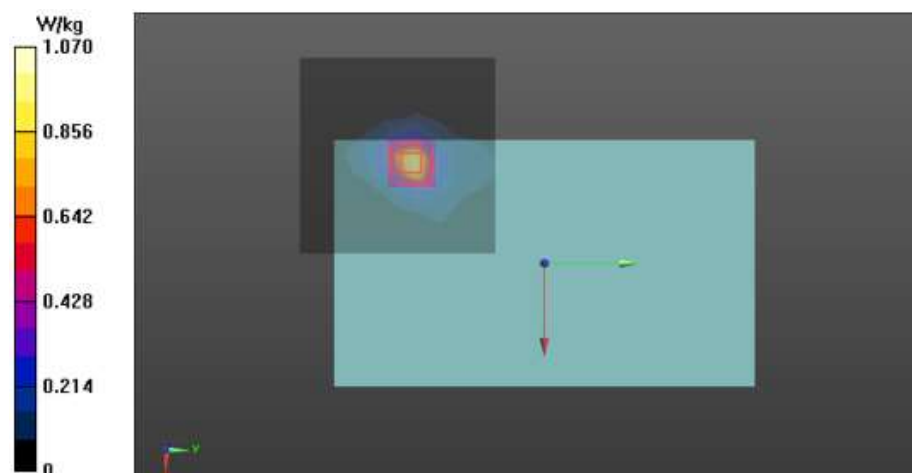
Peak SAR (extrapolated) = 1.73 W/kg

SAR(1 g) = 0.463 W/kg; SAR(10 g) = 0.151 W/kg

Smallest distance from peaks to all points 3 dB below = 9.3 mm

Ratio of SAR at M2 to SAR at M1 = 65.6%

Maximum value of SAR (measured) = 1.07 W/kg



27)

Date: 2020-08-03

Test Laboratory: KCTL Inc.

File Name: [1.5.3G 802.11 Body.da53:2](#)**DUT: SM-T575, Type: Tablet, Serial: 2c900426c849f110**

Communication System: UID 0, 5GWLAN (0); Frequency: 5260 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5260$ MHz; $\sigma = 4.821$ S/m; $\epsilon_r = 35.252$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(4.94, 4.94, 4.94) @ 5260 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -2; Type: QD OVA 002 BB; Serial: 1220
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 3/802.11 a_Ant.2_CH52_Top_7 mm Grip Sensor Off/Area Scan (9x11x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.342 W/kg

Configuration 3/802.11 a_Ant.2_CH52_Top_7 mm Grip Sensor Off/Zoom Scan (9x9x7)/Cube

0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 3.715 V/m; Power Drift = 0.07 dB

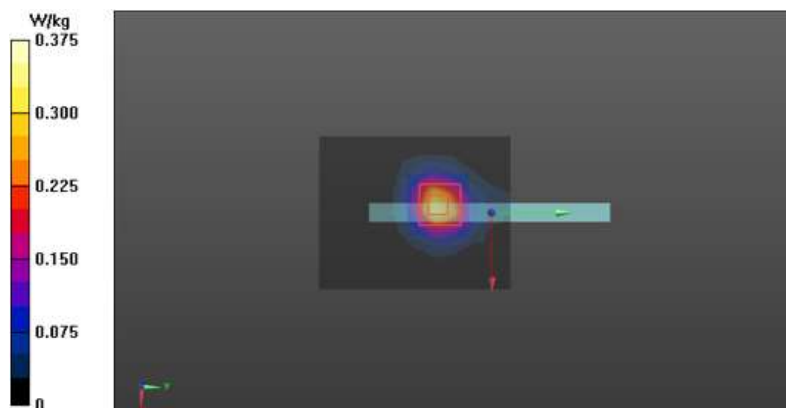
Peak SAR (extrapolated) = 0.610 W/kg

SAR(1 g) = 0.163 W/kg; SAR(10 g) = 0.056 W/kg

Smallest distance from peaks to all points 3 dB below = 10.4 mm

Ratio of SAR at M2 to SAR at M1 = 63.5%

Maximum value of SAR (measured) = 0.375 W/kg



28)

Date: 8/25/2020

Test Laboratory: KCTL Inc.

File Name: [1.5.6G 802.11 Body.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N60117KR**Communication System: UID 0, 5GWLAN (0); Frequency: 5700 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5700$ MHz; $\sigma = 5.077$ S/m; $\epsilon_r = 34.478$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928; ConvF(4.69, 4.69, 4.69) @ 5700 MHz; ; Calibrated: 1/30/2020
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 1/24/2020
- Phantom: ELI V8.0_Left; Type: QD OVA 004 AA; Serial: 2098
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/802.11 a_Ant.1_CH140_Rear_12 mm Grip Sensor Off/Area Scan (10x11x1): Measurement grid: dx=10mm, dy=10mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.666 W/kg

Configuration/802.11 a_Ant.1_CH140_Rear_12 mm Grip Sensor Off/Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 13.22 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.32 W/kg

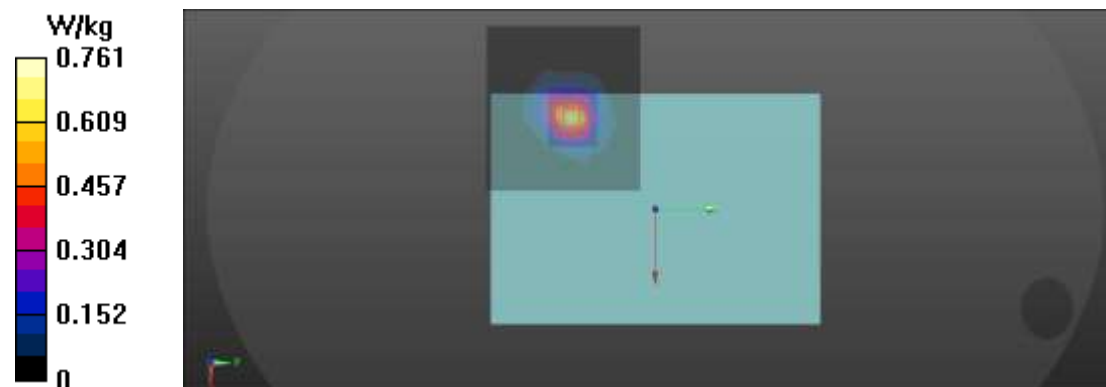
SAR(1 g) = 0.310 W/kg; SAR(10 g) = 0.102 W/kg

Smallest distance from peaks to all points 3 dB below = 8.4 mm

Ratio of SAR at M2 to SAR at M1 = 60.7%

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.761 W/kg



29)

Date: 2020-08-04

Test Laboratory: KCTL Inc.

File Name: [1.5.6G 802.11 Body.da53:2](#)**DUT: SM-T575, Type: Tablet, Serial: 2c900426c849f110**

Communication System: UID 0, 5GWLAN (0); Frequency: 5500 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5500$ MHz; $\sigma = 5.073$ S/m; $\epsilon_r = 35.188$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(4.78, 4.78, 4.78) @ 5500 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -2; Type: QD OVA 002 BB; Serial: 1220
- Measurement SW: DASY52, Version 52.10 (4);

Configuration 3/802.11 a_Ant.2_CH100_Top_7 mm Grip Sensor Off/Area Scan (9x11x1):

Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.393 W/kg

Configuration 3/802.11 a_Ant.2_CH100_Top_7 mm Grip Sensor Off/Zoom Scan (8x8x7)/Cube

0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 4.798 V/m; Power Drift = 0.10 dB

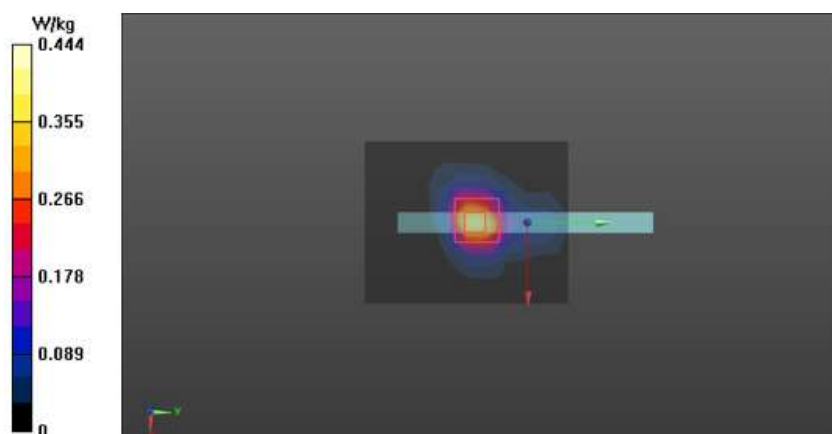
Peak SAR (extrapolated) = 0.739 W/kg

SAR(1 g) = 0.189 W/kg; SAR(10 g) = 0.065 W/kg

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 63%

Maximum value of SAR (measured) = 0.444 W/kg



30)

Date: 2020-08-05

Test Laboratory: KCTL Inc.

File Name: [1.5.8G 802.11 Body.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: 2c900426c849f110**Communication System: UID 0, 5GWLAN (0); Frequency: 5785 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5785$ MHz; $\sigma = 5.351$ S/m; $\epsilon_r = 34.312$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(4.65, 4.65, 4.65) @ 5785 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -2; Type: QD OVA 002 BB; Serial: 1220
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/802.11 a_Ant.1_CH157_Rear_12 mm Grip Sensor Off/Area Scan (10x10x1):

Measurement grid: dx=10mm, dy=10mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.627 W/kg

Configuration/802.11 a_Ant.1_CH157_Rear_12 mm Grip Sensor Off/Zoom Scan (9x9x7)/Cube

0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 6.212 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.17 W/kg

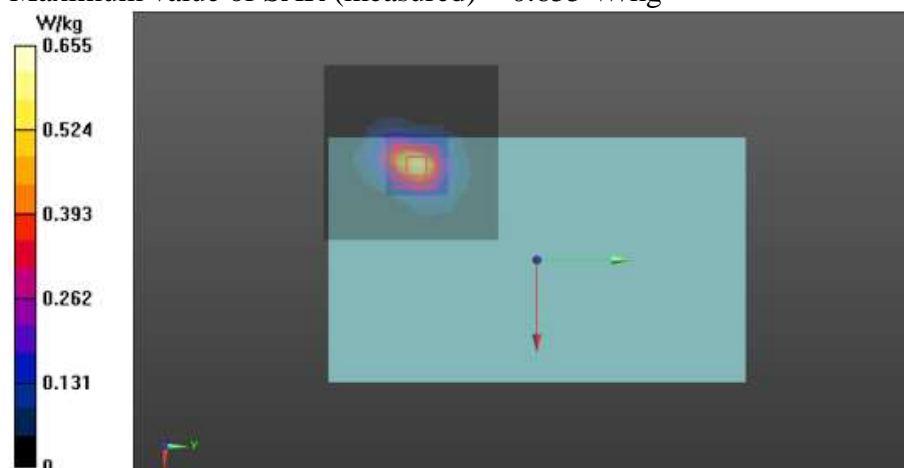
SAR(1 g) = 0.267 W/kg; SAR(10 g) = 0.089 W/kg

Smallest distance from peaks to all points 3 dB below = 8.8 mm

Ratio of SAR at M2 to SAR at M1 = 59.6%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.655 W/kg



31)

Date: 2020-08-05

Test Laboratory: KCTL Inc.

File Name: [1.5.8G 802.11 Body.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: 2c900426c849f110**

Communication System: UID 0, 5GWLAN (0); Frequency: 5785 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5785$ MHz; $\sigma = 5.351$ S/m; $\epsilon_r = 34.312$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928;ConvF(4.65, 4.65, 4.65) @ 5785 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -2; Type: QD OVA 002 BB; Serial: 1220
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/802.11 a_Ant.2_CH157_Rear_12 mm Grip Sensor Off/Area Scan (11x11x1):

Measurement grid: dx=10mm, dy=10mm

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.245 W/kg

Configuration/802.11 a_Ant.2_CH157_Rear_12 mm Grip Sensor Off/Zoom Scan (9x9x7)/Cube

0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 6.059 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.461 W/kg

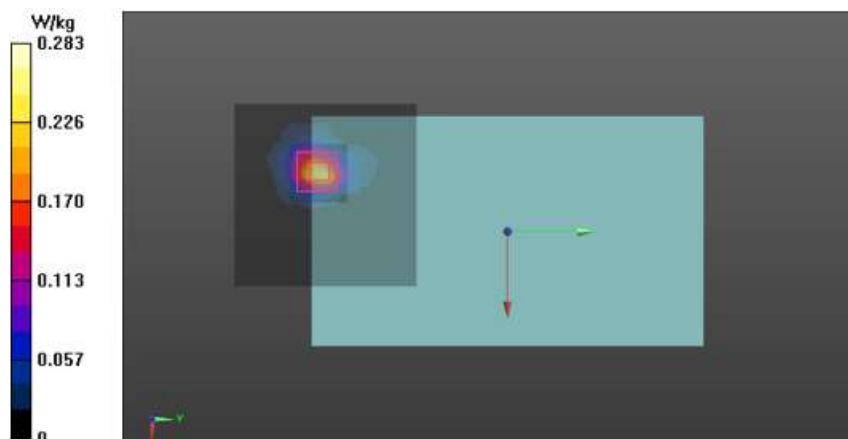
SAR(1 g) = 0.108 W/kg; SAR(10 g) = 0.034 W/kg

Smallest distance from peaks to all points 3 dB below = 7.9 mm

Ratio of SAR at M2 to SAR at M1 = 62.4%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.283 W/kg



32)

Date: 2020-08-01

Test Laboratory: KCTL Inc.

File Name: [1.Bluetooth_GFSK_DH5_Body.da53:0](#)**DUT: SM-T575, Type: Tablet, Serial: R32N60119CT**Communication System: UID 0, Bluetooth (0); Frequency: 2441 MHz; Duty Cycle: 1:1.30167
Medium parameters used (interpolated): $f = 2441$ MHz; $\sigma = 1.757$ S/m; $\epsilon_r = 39.828$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3928; ConvF(7.33, 7.33, 7.33) @ 2441 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn666; Calibrated: 2020-01-24
- Phantom: ELI V5.0 -3; Type: QD OVA 002 AA; Serial: 1173
- Measurement SW: DASY52, Version 52.10 (4);

Configuration/Bluetooth_GFSK_DH5_Ant.1_CH39_Rear_0 mm Grip Sensor Off/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mmInfo: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.740 W/kg

Configuration/Bluetooth_GFSK_DH5_Ant.1_CH39_Rear_0 mm Grip Sensor Off/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 23.67 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 1.51 W/kg

SAR(1 g) = 0.438 W/kg; SAR(10 g) = 0.146 W/kg

Smallest distance from peaks to all points 3 dB below = 5.4 mm

Ratio of SAR at M2 to SAR at M1 = 32.1%

Info: [Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.997 W/kg

